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Original Articles

THE FORMATION OF URIC ACID.*

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The rôle of uric acid in physiology and pathology has long formed a theme for unrestricted discussion and controversy in scientific literature. The wealth of published contributions on this subject abounds in the most characteristic specimens of what a recent medical writer has aptly termed "truth and poetry about uric acid."

Nevertheless the student of the physiology of uric acid can not fail to recognize a number of distinct epochs representing the introduction of new discoveries and consequent altered points of view in the interpretation of familiar phenomena. When the secret of each novel attitude is revealed it no longer becomes difficult to follow the march of progress in science; and, what is all-important, we are thus enabled to revise or formulate anew the problems with the solution of which advancement is coincident.

This society, so happily inaugurated "for the diffusion of the knowledge of the medical sciences," will accomplish great good if its proceedings emphasize that before pathologic variations can be appreciated adequately, some fundamental knowledge of the normal functions of organs is essential. To the neglect of this, as a general rule, is due not a little of the confusion regarding the part played by uric acid in the animal body. Clinical observations, not infrequently confined to isolated cases or limited numbers, and more often carried out with inaccurate methods of research—the so-called clinical methods—have led to theories which were only reluctantly abandoned. Every investigator will admit that an hypothesis is a great aid to research in any domain; but a theory is admissible only so long as it fits the facts. Yet how difficult it is to relegate to the rubbish heap a theory which is supported by the authority of a distinguished worker. The present generation of scientists is learning to present truths eagerly, but to generalize from them with caution.

EARLIER VIEWS.

The obstacles to scientific progress which I have just referred to are well illustrated by some earlier views on the origin of uric acid in the body. Since urea was recognized as an end product of the oxidative decomposition of proteids nothing was easier than to assume that the larger molecule, uric acid, represents a product of incomplete oxidation. Whether uric acid was regarded as an intermediate product in the combustion of the large proteid complex or whether it was, rather, the outcome of an abnormal or irregular disintegration change—in either event it seemed proper to attribute an increased occurrence of the compound to a disturbance in the usual oxidation of ordinary proteids. In clinical language the vague uric-acid diathesis became the expression of an equally vague lowering of the oxidative capacity of the organism. It was observed, for example, that leukemia is often accompanied by an increased output of uric acid in the urine; and at once the theorists attempted to associate this with an insufficient oxygen-carrying capacity of the circulating blood, in connection with a relative diminution in the number of erythrocytes. The increasing number of cases reported failed to show any constancy in the increase of uric acid excreted. When finally the crucial physiologic experiment of interference with respiration was made, no increase of uric acid was noted; and, above all, when the actual conditions in disease were experimentally investigated, it was found that leukemia is not attended with any deficiency in oxidative powers. With these negative results the structure of the old theory of the incomplete oxidation of proteid fell. How much would have been gained in this instance alone by a more inductive method of study.

My subject is restricted to one aspect of the physiologic problems concerning uric acid, namely, its formation in the body. How many erroneous ideas have arisen from a mistaken identification of the excretion of uric acid with its formation no one can say. So long as uric acid was looked on as one of the end products of nitrogenous catabolism the confusion was a natural one. We have, however, lately come to recognize this chemical compound as an intermediary product which may, in turn, experience ready decomposition within the body. With this once clearly recognized it is evident that the amount of uric acid eliminated within any given period is not necessarily any adequate index to that which has been formed within or introduced into the organism; and this statement applies independently of any undue retention to which attention has been directed so zealously by certain writers. The physiologist is to-day in a position to recognize the precursors of uric acid in the ingested foods or the disintegrating tissues and likewise to estimate with accuracy the quantities of these compounds which escape from the organism unchanged. And if the chemical and physiologic history of the intermediary transformations is not yet unfolded in its entirety, we can at least report commendable progress.

A review of early theories is unnecessary.[1] Manifold

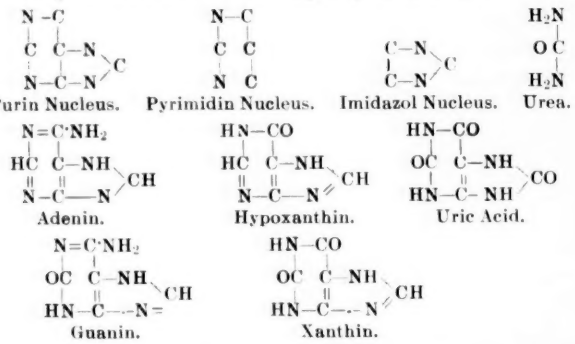
* Read before the Harvey Society of New York at the Academy of Medicine.

1. For a comprehensive review of the older literature on uric acid in physiology and pathology, the reader is referred to the papers by Wiener: Ergebnisse d. Physiol., 1902, vol. I, part 1, 1903, vol. II part 1; Burian and Schur: Pflüger's Arch., 1900, vol. lxxx; 1901, vol. lxxxvii; Walker Hall: "The Purin Bodies of Foodstuffs," 1903. No attempt is made in the present paper to give a complete list of the newer investigations, only the more important references being noted.

experimental investigations have long since demonstrated the untenability of the view ascribing the origin of uric acid to a decomposition of simple proteids, in which it might arise as an antecedent of urea. Similarly the notion of attributing the production of uric acid to a diminished oxidative capacity in the body as a whole may be dismissed, although we shall see that certain greatly modified aspects of this view have again arisen in other connections. The more adequate, or what may appropriately be termed the modern conception of the formation of uric acid is associated especially with the researches of two investigators, Kossel and E. Fischer.

THE WORK OF KOSSEL AND E. FISCHER.

E. Fischer definitely established the chemical structure of uric acid and a large group of related compounds which have become familiar, through their physiologic and pharmacologic bearings, as the xanthin compounds, the alloxuric compounds or (more appropriately) the purin compounds. No physician can hope to have an adequate appreciation of the problems under discussion without some familiarity with the chemical structure of this group of related substances. The formulæ here presented therefore demands no apology; a superficial inspection alone reveals relationships which a page of description can not make equally evident.



Kossel's epoch-making contribution consisted primarily in his demonstration that the purin compounds, such as xanthin and hypoxanthin, are disintegration products of the widely distributed nucleoproteids, nucleins or nucleic acids. In one of his earliest papers, in 1881, recognizing the near chemical relation of the purin compounds to uric acid (see formulæ), he wrote: "The thought is at once suggested that these compounds play a significant rôle as normal precursors of uric acid or urea. The difficulty involved in the recognition of this lies in the circumstances that these substances have heretofore been found in organs in small quantities only." Kossel[2] proceeded to show that the proportions of the different purin derivatives present in or obtainable from the body is far greater than had been anticipated.

The earliest experimental attempts which might have served to verify Kossel's hypothesis gave negative or uncertain results in almost every case. These failures are in part explicable in the light of subsequent study. A part of the difficulty is ascribable to inadequate analytical processes, a fact which is deserving of note at a time when the patient endeavors of the students of accurate analytical methods receive scanty appreciation from those who have no immediate use for them. Uric acid was at first missed as an end product of hypoxanthin-feeding, guanin-feeding and nuclein-feeding, partly owing to inadequate methods, in part probably because of poor absorption of the ingested materials, and more likely, further, because of the destruction of the formed uric acid in the intermediary metabolism of such species (dog, rabbit) as were inadvisedly selected for the trials.

2. Kossel: Zeitft. f. Physiol. Chemie, 1881, vol. v, p. 267.

HORBACZEWSKI'S EXPERIMENTS.

In 1889 Horbaczewski gave a new turn to the experiments and theories on uric-acid formation. To him was due the first experimental proof of the transformation of purin compounds into uric acid. By digesting organs like the spleen, rich in nucleoproteids, with blood, he obtained either the purin bases xanthin and hypoxanthin, or uric acid, according as his experiments were conducted in the absence or presence of oxygen. These experiments have become classic. But Horbaczewski made an equally important addition when he fed the nuclein prepared from spleen pulp and succeeded in eliciting an increased output of uric acid in both man and animals, thus transferring to the living body the experience gained in the digestion beaker.

Horbaczewski was unfortunate in the explanation which he gave for this new production of uric acid. He attributed it to the disintegration of nucleoproteid material, it is true; but he persistently refused to credit the increase to the purin-yielding substances ingested. Accordingly, he invented the theory of a leucocytosis induced by the ingested nucleoproteids, leading in turn to a breaking down of body cells,—leucocytes rich in the purin-bearing nucleic-acid groups. That the introduction of nucleic acids, either as such or as proteid salts (nucleins, nucleoproteids) may lead to an increased elimination of uric acid has since been demonstrated for many compounds of both animal and vegetable origin and in a considerable number of animal species; but the evidence is to-day abundantly in favor of a direct transformation of the ingested material without the intermediation of leucocytes. An increase in the digestive leucocytosis under this condition of feeding is the unusual rather than the usual occurrence; and the experience which I have gathered with my co-workers indicates that a characteristic metabolism of the purins follows the most diverse modes of introduction of the mother substances into the organism. Parenteral paths are equally effective.

THE PURINS AND URIC ACID.

The failure of the earlier attempts to demonstrate in animals a conversion of ingested free purin bases, such as are obtained by the destruction of nucleic acids and nucleins, into uric acid, raised the question: Is some peculiar chemical complex or union like that of the nucleic acid molecule requisite for the conversion of the purins to uric acid in the body, or can the free purin bases be thus converted? For example, can guanin or adenin as such be transformed to uric acid, or is the characteristic oxidation dependent on the manner in which these purin bases are bound up in nucleic acid and such uric acid forming products as thymus gland? It is conceivable that hypoxanthin, for instance, might exert a leucotactic action such as Horbaczewski assumed for the nucleins; in that event the increased formation and destruction of leucocytes would presumably be accompanied by an increased elimination of liberated phosphoric acid. Krüger and Schmid[3] have made these questions superfluous by demonstrating that even in man the ingestion of hypoxanthin, xanthin, guanin or adenin is followed by an increase in the output of uric acid. They have made clear that this phenomenon is in no

3. Krüger and Schmid: Zeitft. f. Physiol. Chemie, 1902, vol. xxxiv, p. 549. Earlier observations on hypoxanthin were reported by Minkowski and by Burian and Schur.

way the outcome of a leucotactic action of the free purin bases fed and that the phosphoric-acid metabolism of the body undergoes no noticeable alteration which would indicate any coincident destruction or synthesis of nucleic acid in the tissues.

With the genetic relationship between the purins of the food, whether in the form of the free hypoxanthin of meat extract or the nucleoproteids of glandular tissues like sweetbreads and liver once established, it is instructive to consider the quantitative relations between these two factors in metabolism. To what extent do the purins introduced contribute to the increased production and elimination of uric acid? When a balance is struck between the intake of purins, either free or combined, and the increase in output of uric acid in the urine as a measure of its production from the ingesta, a deficit is uniformly detected. It might be assumed that the purins fed are in part eliminated unchanged; indeed, it is well recognized that the urine contains other purin derivatives than uric acid. The quantity of these is, however, not appreciably or significantly altered by purin feeding except under unusual circumstances. A few actual figures will serve to illustrate the deficit to which reference has been made. Thus, in one case in man after feeding 1.2 gm. of nitrogen in the form of hypoxanthin, 0.77 gm. was recovered as excess of uric acid, or about 62 per cent.; in the case of adenin 33 per cent. was recovered as uric acid, and less than 4 per cent. left the organism unchanged.[4]

DESTRUCTION OF URIC ACID.

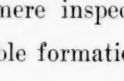
The failure to recover the entire quantity of ingested purin in the form of uric acid or unchanged urinary purin suggests two explanations: 1, A retention of a portion of the purins or the uric acid formed therefrom so that they fail to reappear in the urine; or 2, a destruction of purins in the metabolic exchanges. The retention theory has been abandoned by almost all investigators except the followers of Haig, whose theories I regard as irreconcilable with modern experimental evidence. The question of the destruction of purins in the body, though foreign to the real subject of this lecture, nevertheless deserves brief consideration.

It has long been known that very considerable quantities of uric acid itself can be destroyed in the body. The evidence for this is made more convincing by the studies on various isolated organs in which this destruction has been investigated directly. For example, when blood containing a solution of uric acid is perfused through a surviving liver a progressive loss of uric acid takes place. The quantity of uric acid eliminated or found at any moment is therefore by no means an index to the quantity formed. The recognition of this fact, of the power of the animal organism to catabolize uric acid like other nitrogenous compounds, is one of the fruits of modern research which has profoundly changed our attitude toward the problems of purin metabolism.

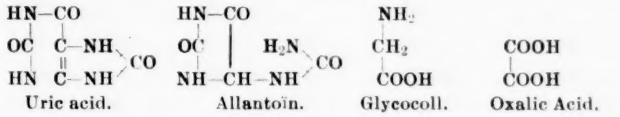
The extent to which the destruction of uric acid and other purins actually takes place varies in different animal species. Burian and Schur[5] have made an elaborate study of this subject and reached the conclusion that the proportion of the ingested purins which escapes destruction and is therefore eliminated as uric acid, is rather constant. In carnivora, like the dog and cat, it is about 1/20; in herbivora, like the rabbit, 1/6, and in man ½ of the purin material introduced. This explains who so little uric acid is ordinarily found in the urine of the familiar laboratory animal, the dog, in contrast with man. It is furthermore probable that young animals are not equally capable of effecting the destruction of uric acid, and it is not unlikely to me that similar defects may be associated with pathologic conditions.

If we summarize these recent findings respecting the destructive capacity of the body for uric acid, a new point of view arises in the discussions of the so-called uric-acid diathesis. Uric acid formed in the body is ordinarily largely destroyed in the body again; it may therefore occur in unusual amount owing to diminished destruction equally as well as it might accumulate through imperfect elimination or increased production. The important point is that a study of the urine alone will not decide. The tolerance of the organism for purins must be ascertained by a comparison of the intake.

What are the end products of this destruction of uric acid in the organism? Urea is at once suggested by the mere inspection of the structural formulæ. The possible formation of oxalic acid



in the same reaction is also thus brought into view. In the carnivorous dog and cat the observations of Salkowski, Minkowski, Cohn and the work in our labthe purins. A further possible decomposition product oratory, have indicated that allantoïn represents an important transformation product of uric acid and is glycocoll. The chemical relationships involved are made clear by the comparison of the structural formulæ:



The current views regarding the relative formation of these compounds under different circumstances are still divergent and a discussion of them at this time would be unprofitable.

The review which has been presented up to this point has traversed the paths familiar to every student of this subject. At most the changing ideas regarding the origin of uric acid have been pointed out. The distinctly modern aspect of the problem concerns the mechanism by which the metabolism of the purins is effected —the chemical history of the reactions which yield uric acid from nucleoproteids, and in turn cause its disappearance.

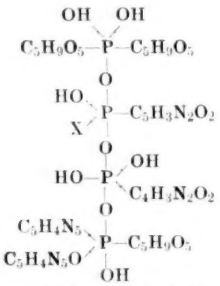
ENZYMES AND PURIN METABOLISM.

That a preponderating rôle is played by soluble enzymes is no longer a matter of conjecture; nor is this anything other than what the increasing knowledge of the importance of these biologic agents would lead us to anticipate. Enzymes are no longer thought of exclusively as agents of the digestive apparatus; they enter everywhere into the manifold activities of cells in almost every feature of metabolism. Hydrolysis and oxidation are facilitated by their participation in definite, conceivable ways. Horbaczewski's[6] observations on the formation of uric acid *in vitro* from the purins of spleen pulp formed the starting point for the new departure. Spitzer[7] then demonstrated that extracts of spleen and liver may yield uric acid when air is present, even in the absence of putrefactive processes, thus indicating the enzymatic character of this reaction. He also showed

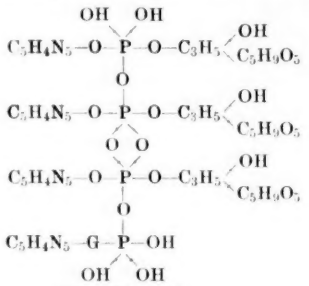
4. The data are taken from Krüger and Schmid: Loc. cit., p. 559.
5. Burian and Schur: Pflüger's Arch., 1901, vol. lxxxvii, p. 335. Cf. also Krüger and Schmid: Loc. cit.
6. Horbaczewski: Monatsh. f. Chemie, 1891, vol. xii, p. 221.
7. Spitzer: Pflüger's Arch., 1899, vol. lxxvi, p. 192.

that uric acid can be obtained in an oxidative way from adenin and guanin by the action of some constituent of spleen or liver extracts in the presence of atmospheric oxygen, although the formation of uric acid is far more extensive when xanthin and hypoxanthin are the precursors. These results were confirmed by Wiener,[8] and the facts which they represent are now undisputed.

The additional contributions of Schittenhelm[9] and Jones[10] have established the co-operation of several enzymes in the steps leading to uric acid as an end product. The first of these involves a nuclease, that is, an enzyme capable of splitting up nucleic acid so as to liberate the purin bases present in its complexes. The constitution of the nucleic acids is by no means determined, although the reasearches of Osborne[11] and of Bang[12] enable one to obtain some conception of the possible relationship of the purin derivatives to the remaining radicals, as indicated in the provisional formulæ:

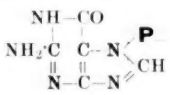


Triticonucleic Acid.



Guanylic Acid.

Burian[13] has lately given reasonable evidence that the purin groups are attached to the remaining nucleus at the 7-position of the purin skeleton, so that guanin, for example, would be attached to the remaining groups as indicated below:



In chemical terms the action of the enzyme nuclease would thus be comparable with the reaction involved in the hydrolysis of an acid amide:

$$[\text{purin}]\,N \cdot PO(OH)_2 + H_2O \longrightarrow [\text{purin}](NH) + (HO)_1 \cdot PO(OH)_2$$

Nucleases are doubtless widely distributed in nature. They must obviously share in many autolytic processes in organs and tissues. At present, however, our information regarding this class of enzymes is rather limited.

More light has been thrown on a second step in the intermediary metabolism of purins. Several investigators, notably Jones[10] and Schittenhelm,[9] have succeeded in isolating enzymes of the amidase type which accomplish the conversion of the amino purins, guanin and adenin into xanthin and hypoxanthin, with liberation of ammonia.

Reactions of this kind, attributable to enzyme influence, have long been recognized and assumed to have importance in the deamidizing of nitrogenous compounds in metabolism.[14] For the cases under consideration the reaction may be assumed to proceed as follows:

$$\underset{\text{Guanin.}}{C_5H_5N_5O} + H_2O \longrightarrow \underset{\text{Xanthin.}}{C_5H_4N_4O_2} + NH_3 \quad (\text{Guanase})$$

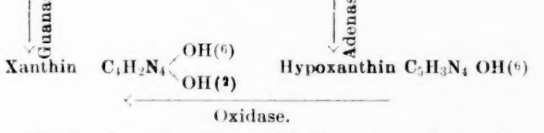
$$\underset{\text{Adenin.}}{C_5H_5N_5} + H_2O \longrightarrow \underset{\text{Hypoxanthin.}}{C_5H_4N_4O} + NH_3 \quad (\text{Adenase})$$

In correspondence with this, adenin and guanin are converted into hypoxanthin and xanthin, respectively, when they are digested with extracts of certain tissues. An interesting controversy has arisen in the study and developed into more than polemical interest. Having obtained extracts of organs which readily deamidize adenin without converting guanin, Jones very properly postulated the existence of two distinct amidases—guanase and adenase. Working with the same organ (the spleen), Schittenhelm has failed to note any such distinctive difference. The discrepancy has lately been cleared up by the discovery by Jones,[10] that whereas the spleen of the ox (with which Schittenhelm experimented) contains guanase, it is missing in that of the pig (which formed the source of Jones' experimental material); and the latest experiences of Schittenhelm[15] and of Pfeiffer[16] add to the growing conviction that the distribution of the enzymes concerned in the metabolism of the purins is very unlike in different species. Future studies in this field will doubtless contribute many features of interest in comparative physiologic chemistry.

That these enzymes are not universally distributed in all organs and tissues is certainly not without physiologic significance. Up to the present adenase and guanase have been found in the spleen, liver, lung, muscle, thymus and suprarenals; not in the intestines, blood or kidneys.[17] When tissue extracts prepared from spleen, liver, muscle or lung are allowed to act on guanin or adenin in the presence of oxygen, uric acid is found in place of xanthin or hypoxanthin. In this reaction a third enzyme, an oxidase, is involved, converting hypoxanthin to xanthin and subsequently to uric acid.

$$C_5H_4N_4O + O \longrightarrow C_5H_4N_4O_2, \text{ etc.}$$

Under favorable conditions the conversion may be practically complete. The first step in these reactions may be graphically represented as follows:[18]



The final step is the oxidative transformation of xanthin into uric acid. I am unable in the allotted time to give appropriate recognition to the various investigators who have at length enabled us to trace in some comprehensible way the intermediary changes by which the purins and their nuclein precursors may give rise to uric acid; nor am I permitted to do more than refer to the work of Wiener, Ascoli, Schittenhelm and others,[19] in which the destruction of uric acid by the agency of uricolytic enzymes has been found conspicuous in the kidney and liver, and in lesser degree in extracts of muscle and bone marrow. The sequence of events in the transformation of purins is bound up in a series of typical enzyme reactions.

(To be continued.)

8. Wiener: Arch. f. Exper. Pathol. u. Pharmak., 1899, vol. xlii, p. 373.
9. Schittenhelm: Zeitft. f. Physiol., Chemie, 1904, vol. xlii, p. 251; vol. xliii, p. 228; 1905, vol. xlv, p. 121; vol. xlvi, p. 354.
10. Jones: Ibid., 1905, vol. xlv, p. 84, and earlier papers therein mentioned.
11. Osborne and Harris: Ibid., 1902, vol. xxxvi, p. 85.
12. Bang: Ibid., 1901, vol. xxxi, p. 411.
13. Burian: Ergebnisse d. Physiol., 1904, vol. iii, 1, p. 90; Johnson: Amer. Chem. Jour., 1905, vol. xxxiv, p. 197.
14. Cf. Lang: Hofmeister's Beitr. z. Chem. Physiol., 1904, vol. v, p. 321.
15. Schittenhelm: Zeitft. f. Physiol. Chemie, 1905, vol. xlvi, p. 354.
16. Pfeiffer: Hofmeister's Beit. z. Chem. Physiol., 1905, vol. vii, p. 463.
17. Schittenhelm: Zeitft. f. Physiol. Chemie, 1904, vol. xliii, p. 236.
18. Jones: Ibid., 1905, vol. xliv, p. 2.
19. Schittenhelm: Ibid., 1905, vol. xlv, pp. 147, 161; Almagia: Hofmeister's Beitr. z. Physiol. Chemie, 1905, vol. vii, p. 459.

EYE-STRAIN AS A CAUSE OF DISEASES OF THE DIGESTIVE ORGANS.

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PHILADELPHIA.

Before the Section on Practice of Medicine of the American Medical Association,[1] in 1905, the then president of the association, the professor of medicine in the medical department of an old university, read these words:

NONGASTRIC ORGANIC DISEASES PRESENTING GASTRIC SYMPTOMS.

The Eyes.—The subject is familiar to all. Who has not seen correction of errors of refraction relieve so-called "bilious attacks," periodical vomiting, anorexia, indigestion and other gastric symptoms? The cure of grave organic ocular defects relieves similar gastric conditions.

A good-sized book, with no superfluous word, might be written concerning this astonishing admission, for: 1. Every statement made is true. 2. Every statement made is untrue. 3. Its significance is wholly unrecognized and far-reaching. 4. The history and due credit-giving are unjustly ignored.

1. Supposing that the thing intended to be said is really said, we have here an authoritative assent and reaffirmation of the truth that eye-strain frequently produces "bilious attacks," periodical vomiting, anorexia, indigestion, and other gastric and intestinal diseases. It is now sixteen or seventeen years since I began to affirm and to reaffirm this truth, and this is the second convert made among the diagnosticians, leading practitioners or gastrologists. Hereafter I can merely refer critics, sneerers, ignorers and deniers to Dr. Musser, ask them to settle their scores with him, and sing my "*Nunc dimittis*" with a smile of cheery satisfaction. No longer is it a question of the opinion of a "specialist," an "enthusiast," an "exaggerator," "a hobby-rider," a "grinder of his own axes," etc., but the president of the largest American medical society, the professor of medicine in a great medical college, and the leading diagnostician and practitioner in a large city, has spontaneously and publicly stamped the theory with the approving seal of his authority. There is abundant clinical evidence of the correctness of the intended statements of Dr. Musser in the paragraph quoted, and any practitioner can verify it in his practice by numerous patients whenever he will refer them to competent oculists and follow the histories up for a few days, a few weeks or a few months. In this instance it is not for the affirmer to prove his statement. Any man who makes such an assertion as this, and especially one occupying the position of authority and power held by Musser, is perfectly aware of the reach and significance of his published opinion. He has, beyond question, demonstrated it long and often, or he would not dare to come out so plainly and without equivocation. It, therefore, behooves the deniers, ignorers and cynics—the so-called "conservatives"—to prove their negation, because, by every moral and medical law, all patients continued in their sufferings by this "conservatism" may justly, and should legally, hold the deniers, ignorers and cynics criminally responsible. We hold the antivaccinationists accountable for every case of smallpox, and it is proverbially "a poor rule that will not work both ways."

How many deaths are chargeable to the prejudices of Hodge and Meigs and their blind adherents who opposed the clear logic of Oliver Wendell Holmes? And when the error-loving and truth-hating opponents and rivals of Semmelweiss ruined him professionally and allowed thousands of their patients to die they were likewise responsible. Since now a great man has authoritatively announced the frequent dependence of diseases of the digestive organs on eye-strain, those who continue their policy of not giving their patients the possibility of cure by the method suggested must settle with avenging science and the medicine of the future. They can not longer continue the pitiful and silly cry of, "Danger, danger in such extremism," with which they and their commercial medical journals have met the demands of progress in clinical medicine.

2. It is a pity that the method of making the announcement of the paragraph was not itself beyond criticism. There is a perfectly well understood and admitted meaning of the term "organic disease." In the paragraph-title, "Nongastric Organic Diseases," etc., this definition is contravened and mystified. Ametropia is not an organic disease. The eye with the low and common errors of refraction is in no way morbid or diseased, least of all is it organically diseased. Only by secondary endeavors to overcome the malfunction of the ametropic eye does organic disease somewhat rarely arise, either in the eye itself or elsewhere. In the vast majority of cases the attempt to overcome the error—called eye-strain—is purely functional. In the same way, in the last sentence of the paragraph, the repetitive misuse of the term is followed by the words "similar gastric conditions." But the gastric, intestinal and pelvic consequences of eye-strain are at first, and for long, purely functional. As long-continued functional disorder is bound to end in organic disease or anatomic pathology, so here, also, these functional disorders of digestion may finally end in inflammatory and surgical disease.[2] But a wiser discrimination should have guided in the making of the pronunciamento.

The motive may have been excellent which prompted the writer to say, "The subject is familiar to all. Who has not seen," etc.? But method is often almost as important as motive, and in this instance it is doubly or trebly so. If it is correct to say that the subject is "familiar to all," etc., then those who show wilful ignorance of it, those who deny and scoff at it, those who do not bring the possibility of the therapeutic test to their patients—what shall be said of them? Is there any word too denunciatory, any expletive too strong, as applied to one who has seen, often and "familiarly" seen, the relief of eye-strain end bilious attacks, vomiting, anorexia, indigestion and other similar symptoms, and yet who wholly ignores the fact in his published books and articles, who does not act on the suggestion in the treatment of his patients, who scoffs at all reflexes, and who publicly laughs at all such nonsensical theories and theorists. Without the "if," I do not myself call them miscreants and scoundrels—I only ask, if it is so, is it not scoundrelism? The authority implies plainly that all physicians have seen such cures, are familiar with them, know them to be genuine and true—and yet, well, let us glance at the literature! We must remember that there can not be less than one-third of the persons of the civilized world who are suffering from some of these enumerated symptoms and their sequels. There are

1. THE JOURNAL A. M. A., Nov. 4, 1905.

2. This is so true that a great surgeon publicly states that his most brilliant cures of threatened operation, appendicitis, peritonitis, and other "surgical" diseases of the pelvis, have been made without operation, and by sending his patients to the oculist.

several hundred millions of such civilized persons, and hence, admittedly, and at the lowest calculation, there must be a score or two of millions suffering from digestive disorders due to eye-strain. Everybody, plainly implies Professor Musser, is familiar with and admits the fact that the correction of eye-strain gives relief in many cases of gastric and intestinal disorder. Well, if so, why do they not say so and report cases publicly? What kind of familiarity and science is that which is carefully excluded from all publication and open admission? It is, of course, sham familiarity, unscience, nonsense.

First, as to the text-books, treatises and monographs on diseases of the stomach or of digestion.

BOAS, 1897, "Diagnostik and Therapie der Magenkrankheiten," does not mention the eyes as possible cause of stomach diseases.

BOAS, 1901, "Diseases of the Intestines" (translation of Basch), is likewise oblivious of the "familiar" fact.

COHNHEIM, 1905, "Krankheiten des Verdaunugskanales," if "familiar" ignores the theory utterly.

DEBOVE and ACHARD, 1895, and DEBOVE and REMOND, 1893, "Maladies de l'estomac," also seem unfamiliar with this theory.

EINHORN, 1903, "Diseases of the Stomach," "has not seen," etc., or, if he has seen, has not spoken of the matter.

EINHORN, 1904, "Diseases of the Intestines," utterly ignores the well-known theory and facts that support it.

FLEINER, 1896, "Krankheiten der Verdaunugsorgane," would probably agree with the German ophthalmic surgeons in pronouncing such nonsense *Amerikanische humbug.*

FRENKEL, 1900, "Maladies de l'estomac," should come to Philadelphia and study the subject more thoroughly before he writes again. He wholly ignores the theory.

HEMMETER, 1902, "Diseases of the Stomach," should revise almost every page of his treatise if Professor Musser is correct. He has not heard of the theory.

HEMMETER, 1902, "Diseases of the Intestines," inferentially denies both the facts and the familiarity. He is still silent.

KAHANE, 1900, "Therapie der Darmkrankheiten," is a sorry teacher if he has seen and is familiar with such facts.

MATHIEU, 1900, "Maladies de l'estomac," writes strangely if he knows the rôle that eye-strain plays in those maladies, for he does not speak of it.

MARTIN, 1895, "Diseases of the Stomach," is equally to be criticised.

PICK, 1895, "Magen und Darm-Krankheiten," does not allude to the affair.

RODARI, 1904, "Magen und Darm-Krankheiten," wrote too long ago, probably, to have heard of facts which in 1905 are "familiar to all."

SOUPAULT, 1905, "Maladies de l'estomac," does not agree that "all" should be construed as including French physicians.

VAN VALZAH, 1898, "Diseases of the Stomach," omits all reference to this source of gastric diseases.

WEGLE, 1905, "Magen und Darm-Ekrankungen," is also not to be included among the "all."

Of all the recent text-books on gastric and intestinal diseases that I could find in the library of our College of Physicians, the 18 mentioned do not contain any reference whatever to what Dr. Musser says is admitted by all. I have found two, however, who do refer to it. The first is:

Reed, 1904, "Lectures on Diseases of the Stomach and Intestines," under the heading, "Acid Gastric Catarrh," p. 825, has these inciting, powerful and emphatic words: "The oculists include eye-strain among the possible causes." And we yearn, beyond consolation, to know what "oculists" so include," and where the references may be found.

The second is:

Herschel, 1895, "Indigestion," under Reflex Causes, p. 44; this ignored teacher does not ignore, and includes himself among the "all." He writes:

"A considerable amount of attention has been paid of late to the possibility of gastric affections being set up reflexly by eye-strain. George M. Gould, in a paper published in 1890 in the *International Journal of the Medical Sciences,*" stated that he had found that in the young of either sex eye-strain, to a considerable extent, often interfered with the digestive process. My own experience bears this out, as I have had in my own practice several cases in which digestive troubles appeared to depend on astigmatism. One patient in particular, a chemist in the city (London), a highly neurotic individual, used to suffer from great flatulence during the morning hours. I discovered that he was astigmatic, that he lived out of town and read a paper coming up in the train. He informed me that the flatulence invariably came on as soon as he commenced to read the paper in question. The gastric troubles promptly disappeared as soon as he discontinued reading on his way up to town."

Thus eighteen out of twenty recent systematic treatises on diseases of the digestive organs completely ignore what a great authority says is a well-known and highly important cause and cure of such diseases; one smiles at it in a line, and one devotes to it a half-page—with sympathy and respect, President Musser should gladly note.

How is it with the systematic practices of medicine? A highly important cause, known of all, of a vast number of cases of disease, and the means of speedy cure, should, of course, be extensively and minutely set forth and emphatically urged on the attention of the students and practitioners who receive the teachings of the great scientists and instructors. I have examined carefully the following "Systems," and "Practices," and "Manuals," and Text-books: Leo, Allbutt, Mathieu, Ewald, Nothnagel, Debove and Achard, Anders, Bain, Bouchard and Brisseau, Brouardel, Hare, Bartholow, Hughes, Klemperer, von Mering, Monro, Osler, Salinger and Kalteyer, Tyson, Gibson, Butler, Hare, Kuhneman, Lyon, Cohen and Eshner and others.

Why do they entirely fail, even in that old foolish allusion, that is meant to be illusion, in the reference that refers nowhere, the indexing that demonstrates the author's omniscience, but also his total unconcern?

But even here the rule has its exceptions, and some unmentionables may be mentioned:

Allchin, vol. v. p. 235, wrote in 1903: Not a few cases of nervous dyspepsia may be traced to causes acting reflexly, especially pelvic disease, and even, it is asserted, to eye-strain and astigmatism.[3]

French, 1905, has one or two similar strabismic allusions.

Da Costa, 1900, refers to it still more gingerly.

Hare, 1905, "Practical Therapeutics," generously allows two lines to the subject: "Eye-strain may cause stomachic disturbances, flatulent dyspepsia and a variety of general or so-called reflex neuroses."

Musser, 1904, "Medical Diagnosis," is not so generous concerning a factor of great importance in 1905, and one "familiar to all." He allots one word to it:

"Gastric neuroses may arise directly from disease of the stomach or reflexly from disease of other organs, the brain, the spinal cord, uterus, kidneys, liver, eyes or nose."

It is good to know that the eyes are the seventh in order of importance, and are listed before the eighth, the nose—a righteous nosology, one might add.

Loomis-Johnson, 1898, "System of Practical Medicine," under "Intestinal Neuroses," vol. iii, p. 111, article contributed by Stockton and Jones, say:

3. The conjugation of these two words, as is most common, shows that the writer has not a faint conception of the real nature of "eyestrain."

"One of the most prolific causes of functional gastric disturbances is eye-strain, and almost any neurosis may be induced by it. Gastric hyperesthesia, accompanied by hyperchlorhydria, to be followed later by more or less anesthesia and achlorhydria, seems to bear a definite relation to astigmatism of high degree. Without attempting to refer the condition to any special form of eye-strain, we have, nevertheless, been impressed with the frequency of the association of astigmatism and muscular imbalance with painful sensory conditions of the stomach, especially taking the form of distress and pain accompanied by belching after meals, with a good appetite, but voluntary starvation through dread of pain induced by eating. These patients suffer for years and are made rather worse than better by restricted diet."

Stockton, 1903, in "Nothnagel's System," American edition, article on "Diseases of the Stomach" (not in the original), comments, p. 163, as follows:

"Cases of so-called typical gastric vertigo not infrequently depend on uncorrected eye-strain, especially on anisometropia. It is true that the attacks are often precipitated by transient disturbances in digestion, and these digestive derangements in turn may be occasioned by some eye-strain that predisposes to the vertigo. In several instances I have seen the disappearance of both vertiginous and gastric symptoms follow a careful and painstaking correction of the refractive error."

Again, under "Gastric Neuroses," p. 256, he says:

"As earlier stated, eye-strain has been found a frequent cause of functional stomach trouble, especially among those who are living an indoor life and are accustomed to the close use of the eyes. This is particularly true in cases of mixed astigmatism and anisometropia, and is often associated with muscular imbalance."

Dr. Stockton has also placed himself on record more definitely and fully in the same way in an article entitled, "Hygiene of the Digestive Apparatus," in Dr. Pyle's "Personal Hygiene," issued in 1904.

Of the thousands of articles, clinical or pathologic, by physicians, that in the last dozen years have appeared in the medical journals on the subject, it may be said that, in all probability, not one has recognized or emphasized the truth set forth by Dr. Musser in the few lines quoted. It is needless to enumerate. A typical example comes to hand as I write, a solemn address by Robert Hutchinson[4] on "Dyspepsia." Like a multitude of others, filled with light but not in the least enlightening, it is utterly oblivious of the eye-strain origin of this most common of modern diseases. No F.R.C.P. would dream of allowing such a thought to appear or even to be mentioned by him in a public way.

Thus, with the exception of one or two brief allusions in the authoritative text-books, the "scientific" medical men of the world give no hint of their "familiarity" with a highly important source and cure of the most common of all diseases. Plainly, therefore, Dr. Musser is in error as to the knowledge of the fact by medical men. This error clearly arises from the attempt to promulgate a scientific truth by a method which shall ignore the history of the discovery and "save the faces" of those who have wilfully ignored the truth discovered and fought for by others. This may be good politics, but it is unjust, and the question remains: Will it stop the ignoring and the sneering of the "conservatives?"

If, as Dr. Musser avers, eye-strain, known of all, is responsible for a large share of the disorders and diseases of digestion and nutrition, the oculists, especially of the United States, should long ago have received the truth eagerly and should have proclaimed it loudly from the housetops and from their text-books. It is needless to say that it is not so. I need not weary with all the negative citation of authors.

If the truth of Dr. Musser is true, the refractions of our oculists were the means of demonstrating the truth. So far as I know, only one such oculist has publicly confessed.[5] Concerning sick headache or "migraine," many have done so, and in other essays I have given the details, quoted the writers and established the question of priority. Sick headache, however, is not the subject now under discussion. Although that disease consists in the most profound and revolutionizing morbidity of the digestive process, it presents, in the main, a different clinical picture from that of "bilious" attacks, periodical vomiting, anorexia, indigestion, and other gastric symptoms described in the quotation taken as a text.

3. The significance of Dr. Musser's statement is not recognized, and its far-reaching consequences not discriminatingly appreciated. If it is true, then the professional and the social bearings are tremendous. It may be seen at once that the practices of nearly all physicians must be thoroughly changed in the majority, or in a large minority, of the patients consulting. Not even the specialists can be excepted, because, seek where one will, do not the majority of diseases spring directly from the disorders and diseases of digestion and nutrition, or are intimately based on or associated with them? How large a portion of the drugs advertised are directly or indirectly aimed at those conditions? What is the whole nostrum, patent and proprietary medicine business but the organized attack of quackery on the demons of "dyspepsia" and denutrition? Seventeen or eighteen years of clinical observation and study have convinced me that a far larger proportion of all gastric and intestinal diseases are due to eye-strain than even Dr. Musser and Dr. Stockton would admit.

4. If I am in error, I shall be happy to be corrected, but I think I have not mistaken when I say that the recognition of the truth of the ocular origin of these diseases of digestion was begun, and for ten or a dozen years was advocated, solely by me. I care nothing personally for questions and quibbles as to priority, but I am proud of the fact that I early and long and boldly set the truth forth, and have held to it, at first in face of the silence of all others, then in spite of their ridicule and jeers. I began the crusade in 1888, publishing my first clinical report early in 1889[6] of a case of dyspepsia of twenty years' duration cured at once by glasses. I considered attentively the clinical details and the physiologic grounds of the morbid function, its cure, etc. In January,[7] 1890, I again gave the details of other cases, and stated that I had had in all twenty-eight patients in whom dyspepsia, anorexia, nausea, etc., were cured by the extinction of eye-strain. Later, in the same year,[8] I again returned to the charge, giving proofs and repeating the conviction that "eye-strain produces digestive troubles of various kinds, all resulting in malnutrition, anemia"? etc.

In 1891,[9] I reported on 277 cases of digestive and assimilative disorders (anorexia, fickle appetite, consti-

4. British Medical Journal, Nov. 25, 1905.

5. After the above words were written, a second noteworthy exception comes to my hand, the article of Dr. Griffin, in THE JOURNAL of the A. M. A., Jan. 6, 1906. Under "Disorders of Eye-Strain," this frank man publishes reports of cases, diseases of the digestive organs due to eye-strain and cured by ocular treatment. All honor to him.

6. Medical and Surgical Reporter, Feb. 9 and March 9, 1889.

7. American Journal of the Medical Sciences.

8. Medical News, Aug. 23, 1890.

9. THE JOURNAL A. M. A., Sept. 19, 1891.

pation, dyspepsia, nausea, vomiting—not sick headache—car-sickness, etc.), and I wrote thereon:

"For a long time I have been begging my friends, the general practitioners, to heed the fact that digestion and assimilation may be directly and profoundly disordered by eye-strain. Nothing seems more true in medical science than this."

And much of the same purport.

Since then I have continued nearly every year to beg consideration of the fact. Not an oculist published a line of assent or seconding. At last I convinced a few of my friends in general practice, especially one great physician of national fame, by the best of demonstrations—the restored health of patients. The misfortune of the theory consists in the self-evident fact that the cures depend on an accuracy and refinement of practical refraction which has been almost impossible and unknown and which is now only becoming more general.

The manner in which the recognition of the truth is coming about illustrates so admirably the ancient psychologic way that it should be noted. Years of utter silence and ignoring follow a discovery and the repetition or re-emphasis of it by the foolhardy. Then follow ridicule, calumny, coarse dogmatism and stupid opposition of the leaders who do not lead, the authorities who are without authority, the editors who sell themselves to the *Zeitgeist* or to their commercial salary-givers, the indifferent multitude who follow blindly the blind guides. Finally, one after another acknowledge the truth, long evident to many, impossible longer to be slandered or ignored. But the distinguishing characteristic of the confession is that it is "familiar to all" and admitted by all; but still persists the death-like silence as to how the discovery was made, by whom recognition was made necessary. There is not a hint of gratitude to those who have sacrificed themselves in the cause of truth and discovery. Instead it is said: "It is familiar to all," "That is an old story," "We have always said so"—and then is renewed the custom of ignoring and maligning the new and different truth that, in its turn, is struggling for a chance to release other millions from their sufferings. "Conservatism" may be most expensive and criminal when it conserves only error.

There remain several important postscripts to be carefully considered:

1. It is evident that a breach has been made in what seemed the impenetrable walls of the professorial and authority-making classes. Heretofore all students of history and psychology have found that the real discoveries in medicine are ignored, scorned and opposed by the contemporary "authorities," the leading practitioners, the professorial and presidency seeking, the committee-forming, and the text-book-making class. Some of the men composing this class are too often too far interested in themselves, their own personal success and fame. Some are seeking to hold their dearly gained and slippery power, too occupied in courting popularity, hunting LL.D. degrees, baronetcies, trusteeships, other professorships and presidencies, too desirous of doctoring the rich and those dying of organic disease, to have care for the functional diseases which, long neglected, at last land the prematurely dying in the hands of the famous consultants.

2. The question returns as to the sincerity, the effective-making and the permanency of the admission. And, first, as to the sincerity. In Dr. Musser's own text-book of last year's dating, there is but one word out of hundreds of thousands devoted to the matter "familiar to all." In his own article from which I quote, there are some 1,400 words, of which 40 are devoted to a mere statement concerning the ocular "nongastric diseases." In the discussion of Dr. Musser's paper there were 14 participants. Their opinion of Dr. Musser's "familiar to all" admission was shown in the fact that not one considered it worth even alluding to. Now, if this is a truth of value, the matter needs to be set forth in a discriminating and serious manner. We must have the rules of diagnosis to determine the methods whereby eye-strain sets up those symptoms and how certain kinds of strain beget certain digestive diseases. We need more than all the proofs that these general practitioners and gastrologists have cured these patients. Let the cases be reported. The editors of the great official organs of their societies will print such articles from these great men, but they often refuse to do so when the little men and the hobby-riding oculists send their manuscripts.[10] The editors are great friends of the "authorities." The truth is, of course, that the glittering generality, the general and vague admission, is not taken seriously; nor is it meant to be so taken.

The "familiar to all" vagueness is merely a sop thrown to Cerberus and a method of "saving one's face," so that in future years, when the despised "enthusiast and exaggerator" shall have died in establishing the contemptible truth, then those who have killed him (and their patients) by the "damning with faint praise" may proudly say, "We knew all this a generation ago and urged it and practiced it."

3. But did they know and practice it? If so, the proceedings of the great societies of oculists (through whom alone the truth could be demonstrated) and the ophthalmic text-books must show the thousandfold proofs of the theory of eye-strain as a cause of gastric diseases. With dreary monotony they absolutely omit such proofs and go on to discuss the cure, not the cause, of ocular tumors, inflammatory and surgical diseases. Of refraction problems and gastric diseases there is no curiosity or mention.

How is it in practice? Will Dr. Musser's colleagues, the great professors and text-book makers, see to it that the eyes of these patients have been accurately "glassed?" Will the leading diagnosticians and practitioners of New York, London, Paris, Berlin, Boston, Chicago, San Francisco, Philadelphia, Baltimore, New Orleans, and the rest, when a patient comes to them next week, seek to learn if there exists eye-strain? If they do this will they do more than to ask in an incurious and humdrum way: "Have you been wearing glasses?" If they get a reply, "Yes, from a good eye specialist," will they rest unsatisfied? Do they care to go into the matter earnestly, scientifically? Do they seek to know that, as a rule, the greater the reputation of the "ophthalmic surgeon" the more certainly will his prescription of lenses be wholly inaccurate and wrong? Will they seek to learn that there are some 100 good and sufficient reasons why the glasses worn by patients generally are unscientific and incapable of relieving eye-strain? "Familiar to all" may be an astute (or blunderful (?)) way of rendering a truth unfamiliar to any.

10. At the same time the editor of the British Medical Journal accepted the MS. of Hutchinson referred to, he refused an excellent article from an English oculist showing the dependence of "dyspepsia" on eyestrain.

4. The admission, "familiar to all," may be worse than continued silence and scorn. About thirty years ago a leading practitioner wrote several articles admitting most that "the eye-strain crank" could wish, logically implying all that he now claims and giving excellently reported clinical demonstrations. He soon saw that the professional mind could not, and would not, take in the truth. It was ignored utterly and contemptuously. The promulgator realized his error and joined forever the ranks of the ignorers. About thirty-four years ago an American oculist, known of all, stated the clear truth that sick headache is caused by eye-strain. From that day to this, if I am not in error, he has never dared to repeat the hazardous admission or even to allude to it. Thus it may be seen that there are good reasons for suspecting that political shrewdness and tactical acumen often have to do with hindering the progress of medicine, and that a cunning selfishness may require that thousands of patients should continue to suffer rather than that the truth should be preached, a truth which medical dogmatism may not allow to prevail.

THE DIAGNOSIS OF RENAL CALCULUS.*

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Few diseases present such protean symptoms and simulate such a varied array of other maladies as stone in the kidney. This is particularly true if we include in our considerations stone in the ureter.

The smallest stone may cause typical agonizing symptoms not easily mistaken even by the patient, while without attracting notice large stones may occupy both kidneys, causing insidious destruction of these organs and sudden death from anuria. In the consideration of this subject I will first discuss the diseases of the kidney which we must differentiate from calculus nephritis, and will then take up those diseases of neighboring organs which most commonly mislead us in diagnosis.

COMMON KIDNEY DISEASES TO BE DIFFERENTIATED FROM CALCULUS NEPHRITIS.

The more common kidney diseases of which we must always think in making a diagnosis of stone are tuberculosis, pyelitis, pyelonephritis and pyonephrosis from the ordinary pus-producing infections, tumor and intermittent hydronephrosis.

Tuberculosis.—At our Atlanta meeting, two years ago, I had the pleasure of reporting thirty-five cases of tuberculosis of the kidney occurring in the practice of Dr. Howard A. Kelly and his associates in Baltimore. It had been my privilege to study the urinary condition in most of those cases, and you may remember that I laid emphasis on the importance of urinary examination in making a diagnosis of renal tuberculosis. The same law holds in renal calculus—we must study the urine.

Our only positive diagnosis of renal tuberculosis is the finding of tubercle bacilli in the urine or causing the disease in guinea-pigs by the inoculation of the urine or the diseased tissues taken from the bladder. In calculus kidney the urine may show sand or a stone. The *x*-ray and the wax-tipped bougie are invaluable means for making a positive diagnosis, but these methods both fail at times, and if we would enjoy a full measure of success in kidney work we must insist on a careful study of the urine. Blood occurs in the urine in both stone and tuberculosis. The amount varies in both diseases from microscopic quantities requiring both the centrifuge and microscope for the discovery of the few corpuscles present, to severe hemorrhages threatening the patient's life. The amount of blood is more likely to be influenced by exercise in cases of stone, but we sometimes have to search repeatedly before finding a few corpuscles, marking the only change in the urine. Pus in the urine, at least in microscopic quantities, may always be looked for in tuberculosis, while a large percentage of stone cases are aseptic and free from inflammatory reaction, especially in the early stages, and leucocytes, if present, can be accounted for by the amount of blood. I have found that some stone cases with only a moderate number of red corpuscles and leucocytes may have a strikingly large number of epithelial cells.

Pain as a differential symptom between stone and tuberculosis is unreliable. In either case there may be entire absence of pain. Either disease may cause only a dull backache or an indefinite nagging sensation in the lumbar region. In either disease the pain may occur in the most severe paroxysms due to blocking of the ureter by a blood clot, by a plug of detritus, or in calculus disease by a stone. At such times the kidney is likely to be enlarged and the urine may be temporarily clear.

Palpation findings in the kidney region are not characteristic, as in either disease the kidney may be smaller than normal because of atrophic sclerosis or it may be greatly enlarged from fibrosis, lipomatosis, hydronephrosis or pyonephrosis. Palpation of the ureter is of more value, as a large proportion of the tuberculous cases show thickening of the ureter after the disease is advanced in the kidney. In the infected stone cases the ureter may be thickened and simulate the tuberculous ureter. In ureteral calculus the stone is in the lower end of the ureter in 50 per cent. of the cases, and in women it can usually be palpated through the vagina or the rectum. In diagnosing a case as tuberculous on the evidence of finding acid-fast bacilli in the urine, we must always use the differential stain, as illustrated by the following case:

CASE 1.—Mrs. J. B. S., aged 42, married seventeen years, the mother of two children, was admitted to Dr. Kelly's service at the Johns Hopkins Hospital in 1901. The patient had complained at intervals for the past four years of attacks of intense pain in the right lumbar region. She described the pain as labor-like in character, and said that it extended downward toward the bladder and down the thigh as far as the right knee. The attacks lasted from twenty-four hours to five days. At times they were accompanied by chills, nausea and vomiting and constipation. During the attack the patient passed but little urine, but had the constant desire, and after the attack a large quantity of urine was noticed. She sometimes had decided blood tinge in the urine during and after the attack. She never passed gravel. There was always sensitiveness in the right hypochondrium during the attacks. The patient came to Dr. Kelly with a diagnosis of renal tuberculosis, a report having been made from a state laboratory that tubercle bacilli had been found in the urine in abundance. Leonard, of Philadelphia, one of our most expert Roentgen-ray specialists, had failed to get a stone shadow. I examined catheterized specimens of urine without finding pathologic content, and the laboratory in question soon telegraphed to defer the operation, as the bacilli had been found to be smegma. At a later admission Dr. Kelly operated because of the symptoms and blood in the urine and found an oval stone about 2 cm. in length in the pelvis of the kidney.

Pyelitis, Pyelonephritis, Pyonephrosis.—It may be impossible, except at operation, to diagnose any one of

* Read at the eighteenth annual meeting of the Southern Surgical and Gynecological Association at Louisville, Ky.

these conditions from an infected nephrolithiasis. Indeed, the presence of a stone may cause any of these conditions, and again a stone may develop because of the infective process. If the history shows the trouble to have begun during or soon after one of the acute infectious diseases, or during pregnancy, or after the development of a pelvic tumor, the condition is more likely to be one of infected kidney. But we can not exclude the presence of a stone in view of such a history, for it is often under the conditions named that an aseptic stone kidney becomes infected and first begins to cause symptoms. The infected stone kidney is not infrequently the seat of such a connective tissue hypertrophy that the *x*-ray picture is simply a large shadow in which no stone can be outlined. This tissue hypertrophy may extend to the ureter and so close its lumen as to prevent the passage of a wax-tipped bougie into the pelvis, as happened in one of my cases.

Tumor.—It is by no means easy to differentiate between stone in the kidney and a tumor. Here, again, our chief dependence is in the examination of the urine. The occurrence of a profuse hemorrhage which begins and ceases suddenly favors the diagnosis of tumor. The presence of a persistent large tumor mass in the kidney region and the absence of pus in the urine is a combination of circumstances suggestive of tumor. It must not be forgotten that a comparatively small stone blocking the ureter may cause a marked swelling of the kidney and be associated with blood and an absence of pus in the urine.

CASE 2.—In the case of Mrs. F., June 27, 1904, I found a large tender left kidney and the urine showed considerable blood, many large epithelial cells, some unusually large, and an absence of pus. I made a probable diagnosis of tumor, but the patient refused further examination and in a few weeks passed a stone.

CASE 3.—The largest swelling of the kidney that I have ever seen was caused by the presence of an enormous stone, accompanied by fibrous hypertrophy and pyonephrosis. In examination of the urine on five consecutive days I had failed to find tubercle bacilli in the urine and considered the case one of infected tumor or nephrolithiasis. The wax-tipped bougie was negative, due, as I found after removal of the kidney with a portion of the ureter, to sclerotic thickening of the isthmus, which so narrowed the lumen that the catheter could not pass.

Microscopic examination of the kidney cortex demonstrated the presence of tuberculous disease.[1]

Intermittent Hydronephrosis.—A movable kidney, in which the conditions favor the sudden kinking of the ureter, may give rise to attacks which very closely simulate renal colic due to stone. In either case there may be be more or less constant discomfort in the back, with the occasional attacks of severe pain, followed by blood in the urine. If the patient is carefully watched, however, the diagnosis of Dietl's crisis is favored by finding the kidney misplaced and enlarged during the attack, and its return to normal size and position is accompanied by relief of pain and increase in the amount of urine.

Before finishing the discussion of the more common kidney diseases which may be mistaken for stone I must mention two other conditions of which I have seen a few examples. Under the designation of idiopathic hematuria or of renal epistaxis are classed those cases of renal hemorrhage for which we can find no cause even at operation. I have seen one patient who had become profoundly anemic from the loss of blood. Splitting of the kidney in her case resulted in at least a temporary cure, although no cause could be found for the bleeding. I believe there is a tendency to-day to classify many of these cases of so-called renal epistaxis with the chronic interstitial form of Bright's disease. Acute monolateral nephritis may be even more misleading than the above condition, because, in addition to the suggestive urinary findings, we have the acute onset of renal colic.

DISEASES OF NEIGHBORING ORGANS.

Gallstones.—Because of the proximity of the gall bladder to the right kidney, we are not infrequently called on to differentiate diseases of these two organs. The urine shows blood if we are dealing with stone in the kidney and bile if there happens to be obstruction in the common duct. The pain is more likely to radiate down the ureter in the one case and to the epigastrium and up under the shoulder blade in the other. If the gall bladder is enlarged it is more superficial and has more of a pendulum movement than the kidney. Pressure over a normal liver border may be transmitted to a very tender right kidney and the symptoms be misinterpreted. Except under conditions of special technic, the *x*-ray does not register a shadow for gallstone.

One of the best means for differential diagnosis is that devised by Dr. Kelly of catheterizing the right kidney and forcibly injecting a bland sterile solution into its pelvis. The patient can generally tell very accurately whether the pain thus produced is similar in character and location to the pain previously suffered. If the pain caused by the injection corresponds to the patient's previous symptoms, we have simply found the location and can not say definitely that we are dealing with nephrolithiasis. An unusual amount of blood after injection is suggestive of a pelvis already injured by stone. If the wax tip returns with scratch marks, we are certain of stone in the kidney or ureter. If the pelvis holds an unusual amount (the normal pelvis takes in woman 120 mm., 7.5 c.c., or 2 drams, before the patient complains of a fullness or discomfort), there is a dilatation which we have found due to various conditions, viz., stone in the kidney or ureter, movable kidney, stricture of the ureter, and tumors of the pelvic organs pressing on the ureter.

The following case, after the kidney investigation, was considered to be one of probable gallstone irritation:

CASE 4.—Mrs. A., aged 63, the mother of several children, was operated on at the Johns Hopkins Hospital in 1897 for acute appendicitis with abscess formation. The drainage wound became the site of a hernia, for which she was operated on in 1900. I saw the patient with Dr. Finney in July, 1904, at the Union Protestant Infirmary. She had been complaining for about six weeks with an indefinite nagging pain in the upper abdomen, more on the right side. She had had no stomach or bowel trouble, no fever or jaundice. There had been some soreness at times over the right hypochondrium. On examination there was general tenderness over the upper right quadrant of the abdomen. We thought of gallstones and of an omentum adherent to the laparotomy wound in the lower part of the abdomen, and causing the symptoms by tugging on the mesentery of the hepatic flexure of the transverse colon. A specimen of urine catheterized from the bladder contained a few pus and epithelial cells. No red corpuscles were noticed. On cystoscopy I found the bladder reddened in areas, and considered these changes sufficient to account for the few pus and epithelial cells found in the urine. Wishing to exclude stone in the right kidney, however, I catheterized this organ with a wax-tipped bougie with negative results. The urine

1. "The significance of the Urinary Examination in Women," Southern Surg. and Gyn. Transactions, 1904, Case 2, p. 489; also Amer. Med., 1905, vol. ix, p. 559.

2. Hunner: "An Interesting Complication in the Diagnosis of Gallstone," Am. Med., 1903, vol. v, p. 698.

from this kidney contained no pus and the slight amount of blood present was attributed to the trauma of catheterization. About three weeks after this catheterization the patient had her first severe attack of renal colic, passed a small stone by the urethra, and has since enjoyed good health.

Appendicitis.—It would seem to the casual observer that disease of the appendix could not be easily mistaken for renal calculus. But we must remember that many appendix attacks are accompanied by little or no elevation of temperature and that the pain may be located in the kidney region. If we include in this discussion stone in the ureter, we can readily understand that the diagnosis may become more complicated. The ureteral stone may be lodged on the brim of the pelvis and give local pain and tenderness almost exactly under McBurney's point. On the other hand, an inflamed appendix may reach over into the pelvis and cause bladder and rectal symptoms, and, on palpation through the vagina or rectum, the peri-appendicular tenderness and thickening may be mistaken for signs of stone in the ureter. The urine is our safest guide in such cases, but I have recently had a most remarkable case in which I was completely misled because of the urine examinations.

CASE 5.—Miss R., a trained nurse, aged 26.

History.—For ten years she had complained of attacks of pain in the right side, with a more or less constant pain in the region of the right kidney. I saw the patient in consultation with Dr. Julius Friedenwald in December, 1904. She had had two severe attacks within four weeks, requiring hypodermics of morphia for each attack. The attacks, which usually lasted several hours, began with throbbing in the rectum. This increased to a severe pain in the pelvic region and was followed by pain in the region of the right kidney. With some attacks there had been pain in the bladder. At times there had been vomiting. She had never been jaundiced. She stated that the pain never began in the kidney region, radiating downward. There was no very marked soreness anywhere after the attack was over. A number of the attacks had been followed by the passage in the urine of large amounts of pus and blood. After one of these attacks the urine was catheterized from the bladder and sent to one of the most careful microscopists in Baltimore. He found both pus and blood.

Examination.—At my first examination the urine catheterized from the bladder was absolutely normal. A wax-tipped bougie passed to the right kidney returned negative, and the *x*-ray picture was negative. The patient was very stout and I felt that the *x*-ray might easily fail to cast a shadow, particularly if the stone were small and of porous formation. While the symptoms pointed to a pelvic location of the primary trouble, I felt that the negative wax-tip was almost positive evidence that the ureter contained no stone, and yet the urine findings after the attacks had been so positive that I considered the case one of urinary-tract disease.

Operation.—I began the operation by exposing the kidney and splitting it from end to end. The kidney was large, and indentations on the surface appeared like scars. No stone being found in the pelvis of the kidney, nor palpated in its substance, I closed this organ with mattress sutures of catgut and explored the ureter as far as the pelvic brim. The lumbar wound was then closed, except for slight drainage to the kidney cortex, and, turning the patient to the dorsal position, I made an extraperitoneal inguinal incision and explored the ureter from the pelvic brim to the bladder, with negative results. I then opened the peritoneum and found an hypertrophied inflamed appendix, which, reaching over the pelvic brim, was densely adherent over the ureter. The right ovary was so firmly attached to the peritoneum over the pelvic ureter that I was obliged to free it by scissors dissection. I can explain her attacks of renal pain and hemorrhage only on the supposition that the appendicular inflammation was communicated to the ureter, causing a temporary stenosis of this organ, with acute hydronephrosis and evidence of kidney inflammation. A section of the kidney cortex taken from one of the scarred-looking areas showed a mild grade of interstitial infiltration with areas of glomerulo-nephritis. The patient, whose attacks had been increasing in frequency, has been perfectly well since the operation.

Intestinal Obstruction.—Occasionally an attack of renal or ureteral stone colic causes a reflex paralysis of the bowel, with its attendant meteorism and obstipation. If the attack is accompanied by rectal tenesmus, nausea and vomiting, the picture is still more confusing.

CASE 6.—Mrs. K., aged 61, seen with Dr. Eldred at Sparrows' Point. The patient was taken five days ago with sudden pain in the left flank region. She has had several attacks each day, the attacks being more marked between midnight and 6 o'clock in the morning. Dr. Eldred at first considered the attacks due to stone in the kidney or ureter, but as he was unable to get the bowels moved, and as the intestinal distention and distress grew more marked, he began to fear intestinal obstruction. A catheterized specimen of urine was very dark colored. Unfortunately, I did not have a good microscope at hand and did not determine whether there was blood in the urine. The bowels were moved on the day of my visit, and about one week later the patient passed a cylindrical stone about 1 cm. long.

Pancreas Stone Colic.—Recent work by Opie and others has demonstrated conclusively the intimate relationship between gallstones and pancreatic disease. One would scarcely mistake the typical case of acute hemorrhagic pancreatitis, with its sudden onset of acute colicky pains in the epigastrium, nausea and vomiting, subnormal temperature, or chills and fever, and especially when accompanied by the early onset of severe collapse symptoms, for a case of renal calculus. But the mistake might easily be made in the more chronic cases of pancreatitis. The history of former attacks of indigestion or typical gallstone colic, the location of the pains, the presence of a pancreatic tumor, are all helpful differential points. In the future many cases will be differentiated by the examination of the urine, the kidney-stone cases showing blood, while sugar will be found in the pancreatic cases.

Henoch's Purpura and Angioneurotic Edema.—Both of these conditions are often marked by attacks of gastro-intestinal crises and renal hematuria, a combination of symptoms that might easily lead to a diagnosis of renal colic caused by stone.

CASE 7.—L. F., Jewess, aged 20, married. I saw this patient immediately after her admission to the Hebrew Hospital on March 19, 1905. She was flexed almost double by epigastric pain, which two quarter-grain hypodermics of morphia had failed to relieve. The husband said that she had such attacks about once a month. I suspected gallstone colic, and on examination found that another surgeon had anticipated my diagnosis. The husband explained that the linear scar in the right hypochondrium had been made at the City Hospital one year before and that gallstones were not found.

I then instructed the resident physician to examine carefully a catheterized specimen of urine, as he would almost surely find blood as an evidence of stone in the kidney. As I turned to leave, the wife found her Yiddish tongue and the husband said, "Oh, yes, doctor, please look at the lump on her leg." Situated over the upper end of the left tibia was an oblong elevation of the tissues, measuring about 4x6 cm., purple in color, the color disappearing from local areas on pressure and slowly returning. Knowing Dr. Osler to take a special interest in visceral crises in purpuric conditions, I asked the resident physician to notify him of the case. "Yes, yes," said the husband, "she has been in the Hopkins Hospital several times." By referring to the hospital records I found that she had been admitted repeatedly because of attacks similar to the present one. With some attacks she had nausea and vomiting and epistaxis. "Black and blue" spots had been mentioned by the family, but subcutaneous bleeding had not been seen at the hospital, and the diagnosis had always been entered as "re-

curring attacks of abdominal pain." The urine during and immediately after these attacks showed a trace of albumin and hyaline and granular casts, but no blood.

In this cursory and superficial view of the subject I have hoped to throw out enough suggestions to convince you that the diagnosis of stone in the kidney is often a very difficult problem, to be solved generally by a process of exclusion. In closing I recall a sentence from Israel's introduction to his chapter on the diagnosis of kidney-stone colic. He says, in effect, that if one would place himself in a position to diagnose other cases than those with the typical symptom-complex he must, first of all, divest himself of the schematic picture so often presented in the text-books.

A CASE OF TRAUMATIC ENDOCARDITIS.

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Our knowledge of traumatic endocarditis is still very imperfect, though many valuable contributions have been added to our literature since George Fischer[1] published his excellent monograph on this topic.

The following case recently came under my observation, and as I had the opportunity of observing it from its very beginning until its end, a period of nearly two years, I consider it of sufficient interest to publish it.

History.—Albert S., aged 9, always enjoyed fair health. There was no syphilitic, tubercular or rheumatic history in the family. At the age of two the patient had measles and subsequently several attacks of acute bronchitis. No tubercular element in these attacks was noticed.

During the winter of 1902 the patient contracted a light attack of pneumonia, which lasted about one week and left him rather weak. Mucous râles could be heard over both lungs for several weeks after the attack. During his entire illness pulse had always been normal and of good quality. The heart sounds and area of heart dullness were normal. Examinations of urine showed a specific gravity of 1012 and no pathologic constituents.

Examination.—On June 8, 1903, while running, the patient fell violently on his chest. He immediately became unconscious, and two hours after the accident I found him still suffering from profound shock. His face and extremities were cyanotic and covered with a cold perspiration. Respiration was superficial and rapid, temperature subnormal. Pulse small and fast, 170 to 180, of very low tension.

On inspection the whole left side of the thorax appeared to be pulsating, the heart action was so rapid and tumultuous that it was impossible on auscultation to differentiate between systole and diastole. A loud murmur could be heard over all the valves, but its time relation to the heart cycle could not be clearly made out. It seemed to be a continuous murmur. The region of the chest, bounded by the right border of the sternum, the middle axillary line, the third rib below and the epigastrium below, was pulsating so violently that the heart action was plainly visible at a distance. The heart dullness corresponded with this area of visible pulsations. The apex beat appeared to be between the anterior and middle axillary lines in the seventh intercostal space. On the next day, when I saw the patient in consultation with Dr. I. Adler, his general condition and heart action had not changed. No fluid was found in the pericardium. Patient had partially regained his consciousness, but was still very apathetic and listless.

Treatment.—The treatment consisted in the application of the ice bag over the heart and internally five drops of tincture of opium every two to three hours. On the third day one drop of the fluid extract of digitalis every two to three hours was added. As the patient could not stand the pressure of the ice bag we resorted to icy cold water applications. Under this treatment the acute symptoms subsided, and the fourth day after the injury the heart action became more regular; the pulse now was 140, small and easily compressible. A loud blowing systolic murmur could be easily heard over the region of the apex beat, which was transmitted to the left and behind. The heart sounds over the aortic, pulmonary and tricuspid valves were not quite clear, but no murmur could be heard the digitalis treatment was continued, but the dose was reduced to one drop three times a day.

Further Examinations.—On June 28 the boy was allowed to sit up in bed. A careful examination of the heart on that day still revealed the same loud systolic murmur over the mitral valve. The sounds over the other valves were perfectly clear and normal. The digitalis treatment was continued one to two drops a day and when, after an extended absence from the city, I saw the patient again on Oct. 25, 1903, I found his general condition much improved, pulse 120 and his heart smaller. In addition I could now hear a loud diastolic and faint systolic murmur over the aortic valve which were not present at the time when I left the patient in June. I did not see much of the patient during 1904, as he had been taken to the country apparently improved. I saw him again on Jan. 4, 1905, when he showed the signs and symptoms of an influenza. During the attack the heart again became insufficient, and fluid extract of digitalis was again given. The most prominent symptoms during this influenza attack was the very marked dyspnea. Patient improved again and on Feb. 27, 1905, I showed him at a meeting of the Society of German Physicians of New York. At that time he was pale, anemic and poorly nourished. He was restless, easily excited and for a few weeks had showed distinct choreic movements. Nothing abnormal could be discovered in the lungs, but on deep respiration the lower intercostal spaces were drawn in. The heart impulse was easily visible, its pulsation can be seen extending from the right border of the sternum to the anterior axillary line. The apex beat was most distinct in the sixth intercostal space between anterior and middle axillary line. There was a distinct pulsation in the epigastric region. The heart dullness extended from the third rib above to the apex beat below and from the anterior axillary line to the right border of the sternum. Over the apex a loud blowing systolic murmur could be heard, which was transmitted to the left. Over the aorta a loud systolic and diastolic murmur could be made out. A systolic murmur was also heard in the carotid, sub-clavian, axillary, brachial and femoral arteries and a distinct murmur on either side of the vertebral column extending from the lower end of the scapula to the first lumbar vertebræ. The carotids pulsated visibly. The pulsation of the capillaries could be seen under the finger nails (Quincke's capillary pulse). The second pulmonary sound was accentuated. Nothing abnormal was found over the tricuspid valve. There was no venous pulse. A systolic thrill could be felt over the entire heart area, particularly over the left ventricle. Pulse was 120 and of a low tension. The blood pressure, according to tonometer of Gaertner, was 70-80 mm. The liver was distinctly palpable about two fingers' breadth below the free border of the ribs. The spleen could also be palpated under the free costal margin. The urine of a specific gravity of 1018 showed a slight trace of albumin, but no casts. No edema or ascites was noticed. Eyesight was apparently normal. Patient complained of frequent attacks of dyspnea, palpitation of the heart and extreme weakness.

Further Treatment.—On April 20, 1905, I was called to see the patient. His heart's action was identical with that observed right after the original injury. A very severe dyspnea was present, pulse 160 to 170, heart's action very rapid and tumultuous. He told me that another boy hit him and he had to run away from him. I again ordered the cold applications to heart and gave him internally two to three drops pure tincture of opium every two to three hours. The cardiac insufficiency was very marked and the whole left side of the thorax seemed to pulsate. The insufficiency of the heart became more apparent from day to day. Face and extremities were cold and cyanotic. Digitalis and hypodermic injections of strychnin finally had no more influence on the heart's action and on May 2 patient died. On account of religious scruples the autopsy was not permitted.

1. Geo. Fischer: "Die Wunden des Herzens und des Herzbeutels," Archiv. f. klin. Chir., vol. ix, 1868.

LITERATURE AND DISCUSSION.

This interesting case induced me to look up the literature of similar cases in order to compare them with mine and to study their mechanism and the changes produced in the anatomy of the heart.

How a traumatism in the shape of a fall or any other violent contusion inflicted on the thorax affects the heart muscle has been for years a matter of serious consideration and research and the opinions of the different authors vary greatly.

Mauclaire[2] claims that all such injuries to the heart are due to hydraulic pressure and that the resultant injury will vary according to whether the heart at the time of the trauma was in systole or diastole. He claims that these severe contusions always cause "*une véritable anéurysme cardiaque.*"

Schmidt[3] explains the injury to the heart caused by blunt violence, by the mechanical pressure of the blood column itself in the aorta. The blood pressure being suddenly increased by the injury may be sufficient to tear the valves, when immediately after the diastole the artery is filled to its maximum and the valves are closed. Under such favorable conditions, he claims that even a mild concussion may cause serious injury.

Ebbinghaus[4] does not share this theory, and he thinks that the elastic fibers in the wall of the artery will sufficiently compensate for the shock.

Barié[5] claims that the severe compression of the thorax at the time of the injury caused in turn a sudden backward pressure of the blood against the valves and may burst these. All authors agree that any violence which causes a compression of the thorax also increases seriously the blood pressure in its interior, particularly in the arteries.

After these general remarks let us analyze my case. At the time of the injury the boy was rather weak, having gone through a number of attacks of acute bronchitis and a light attack of pneumonia, but his heart, muscle as well as valves, had always been in normal condition. The pulse and urine were normal. I do not think that the repeated attacks of bronchitis and above mentioned pneumonia had a serious influence on his myocardium, as he never showed any signs of a disturbance in the circulation. He had no temperature at the time of the injury—this will exclude any acute ailment, nor did he have any increase of temperature after the injury. The injury to the heart and the endocarditis following it could not have been caused by anything else but the trauma, because immediately afterward the previously apparently healthy heart showed the severe clinical affection described above. As the trauma did not cause the least injury to the wall of the thorax itself nor any visible injury of any kind, we must assume that we had to deal with a so-called *contrecoup* injury to the heart. One of the most striking features of my case was the enormous dilatation of the heart, but there was no tear in the heart muscle itself, no fluid could be detected in the pericardium by either Dr. Adler nor myself. The extent of the dilatation did not change very much during the entire two years, and the compensation of the heart muscle itself was never well established.

Ebbinghaus[4] claims that the acute dilatation of the heart muscle itself may cause a tear in the endocardium, even when there is absolutely no injury to the bony framework of the thorax, which, being elastic, yields, but the heart muscle not yielding, causes a *contrecoup* tear in the endocardium. In all cases where the heart muscle has been injured by blunt violence the valves are most frequently affected, and even a perfectly sound valve may be seriously injured or ruptured, as demonstrated by Barié[5] in experiments on the cadaver and by cases published by Foster[6] and Schmidt[3].

The left ventricle, valves and muscle are much more liable to injury than the right, but the rupture of the muscle seems to be more frequently met with on the right side. Barié's[5] statistics of thirty-eight cases show injury to the aortic valve nineteen, mitral valve sixteen, and tricuspid valve three. Of all the valves the aortic is most frequently injured. The injuries to the mitral valve consist mostly in the tearing of the chordae tendineæ or of the papillary muscles. The valve itself is rarely implicated. In Barié's sixteen cases of mitral injury mentioned above an autopsy was made in fifteen cases and nine showed the tearing of the chordae tendineæ, five the tearing of the papillary muscles, in one case both lesions were present, none, however, showed a tear in the valve itself. These injuries always cause an insufficiency of the valve. In my own case the mitral and not the aortic valve received the full force of the violence at the time of the accident, as the murmur, which could be heard soon after the injury, was a loud systolic one, heard most distinctly over the apex and transmitted to the left. Nothing could be heard over the aorta after the *delirium cordis* had somewhat subsided on the third day. Similar cases have been reported by Stokes and Townsend.[7] In these cases the autopsy revealed a tearing of the chordae tendineæ of the mitral valve.

The injuries of the endocardium are usually followed by endocarditis, which develops in consequence of the injury to the valves or any other part of the endocardium (Rosenbach[8]). Many authors think that the so-called traumatic endocarditis most frequently causes stenosis of the valves, but a careful study of the literature leads me to believe that we meet just as many insufficiencies.

In my own case the traumatic endocarditis caused primarily an insufficiency of the aortic valve and the stenosis followed the insufficiency. In October, 1903, four months after the accident, I detected, for the first time, a loud diastolic murmur of the aortic valve. The systolic sound was muffled, but a distinct murmur could not be heard. The systolic murmur developed gradually, and at the time of the demonstration of the patient in February, 1905, the two aortic murmurs were of the same intensity. The primarily developed insufficiency soon caused stenosis by verrucous granulations forming on the diseased valve and narrowing the lumen of the ostium. This pathologic process has been described by C. Gerhardt.[9]

The origin of traumatic endocarditis has been also a subject of great dispute. Litten[10] and many others claim that the injury to the endocardium provides a convenient nidus for micro-organisms, which in turn cause the above mentioned verrucous granulations on the valve and stenosis.

2. Mauclaire: "Les plaies du coeur et du péricarde," Independ. Med., Paris, 1901, vol. vii, p. 9. "Des contusions du coeur et du péricarde, ibid.

3. Schmidt: "Ueber traumatische Herzklappen und Aortenzerreissung," Münch. Med. Wochft., 1902, p. 1038.

4. Ebbinghaus: "Ein Beitrag zur Lehre der traumatischen Erkrankungen des Herzens," Deutsche Ztft., f. Chir., 1902, vol. lxvi, p. 176.

5. Barié: Revue de Médicin, 1881, pp. 133, 309, 482.

6. Foster: Medical Times and Gazette, 1873, vol. ii, p. 657.

7. Townsend: Cyclopedia of Practical Medicine, 1839. Supplement v, 4-p. p. 634.

8. O. Rosenbach: "Ueber artefizielle Herzklappenfehler," Archiv. f. exper. path. u. Phar. 1878, vol. ix, p. 1.

9. Gerhardt: "Zur Kenntniss der Aorteninsuffizienz," Charité Annalen, 1878, vol. xii.

10. M. Litten: "Ueber traumatische Endocarditis," Aerztliche Sachverstaend Ztg., 1900, No. 24, p. 493.

Traumatic endocarditis frequently develops slowly and insidiously, so that we may speak of a latent period or a period of incubation. The patient may suffer very little during this period, and, therefore, does not seek medical advice until new complications arise. In this way it may happen that a traumatic endocarditis, although of longer standing, may not be detected until some time after the injury. Any cause which requires more work of the already injured heart muscle, as an intercurrent disease, another traumatism, psychic excitement or muscular exertion, would result in a lack of compensation and cause the patient to consult a physician. The latent period or period of incubation may last weeks, months or even years, as in a case recently reported by Prandi.[11]

It is very hard to know what anatomic changes had taken place in the myocardium of my own patient, as an autopsy was refused. I do not doubt that there were considerable changes, as after the injury the heart muscle was never able to perform its normal function and the periods of improvement were always only of short duration. Furthermore, it has been shown by various authors that even the slightest injury to the muscular fibers of the heart or the smallest hemorrhage in the heart muscle, resulting in a separation of the ultimate fibrils, will cause disturbances in the sense of a myocarditis.

The choreatic movements described above are also of interest; they developed some time after the traumatism and continued throughout the entire illness of my patient. I could not find a similar affection described in the literature on this subject.

Finally, I desire to express my thanks to Dr. I Adler for the kind interest he has taken in the preparation of this paper.

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RESULTS OF FACIO-HYPOGLOSSAL ANASTOMOSIS FOR FACIAL PALSY.

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A description of the surgical technic as well as the histories in three cases of facio-hypoglossal anastomosis appeared in the *Medical Record* of Feb. 27, 1904. These cases were presented before the Surgical Section of the New York Academy of Medicine in January, 1904.

Because of the short postoperative period—four, three and two months, respectively—no results had appeared at that time. As each of the three has developed motor power on the paralyzed side, the interest of the cases perhaps justifies a second report, even though the return of power is not complete. Moreover, four additional cases have been operated on. There has not yet been time for the return of motor power, but there are in each case points of considerable interest when compared with the preceding series.

11. Prandi: "Di un endocardite traumatica latente," Gazz di osp. Milan, 1903, vol. xxiv, p. 502.

In general terms, the operation consists in dividing the facial nerve at its exit from the stylo-mastoid foramen, exposing the hypoglossal nerve behind the internal jugular vein and above the level of the posterior belly of the digastric muscle, and, finally, in doing a lateral implantation of the distal portion of the facial nerve into a longitudinal slit in the hypoglossal. The junction is wrapped with Cargile membrane or other material to prevent the ingrowth of connective tissue into the field of the anastomosis. While this last step of the procedure was mentioned in the publication to which reference has been made, its importance was not sufficiently accentuated. To this precaution is probably due a large share of the return of power in Case 1, as will be noted later.

Another most important factor in obtaining results lies in the after-treatment. The systematic use of electricity and massage are naturally very important for maintaining the muscular tone and nutrition. Electrical stimulation, moreover, is said, by the most recent observers, to promote greatly the fibrillation of the axis-cylinders, in which consists the final stage of nerve regeneration. With the first evidence of returning motor power in the paralyzed muscles comes the time for the introduction of the most important single element in the after-treatment, i. e., the systematic exercise of graded voluntary motions in the muscles of the paralyzed side of the face.

There is no doubt that the strongest stimulus to the morphologic and physiologic regeneration of nerves which have been sutured lies in the transmission (or attempted transmission) of volitional impulses from the cortical centers.

Moreover, it must not be forgotten that the transplantation of a distal motor nerve trunk to some neighboring motor trunk removes it from the control of cortical centers which have been educated to the necessities of the coördinate activities of its muscles to new centers which are ignorant of the requirements of its muscle-field. There is, then, an evident primary necessity for the re-education of the new cortical centers to their new duties.

This process is slow and accounts for the fact that emotional symmetry, which is the highest development of coördination, is the last thing to appear in the return of control, and that the return of coördinate power requires so much longer time proportionately than in cases of end-to-end suture of the same nerve trunk.

Basing his technic on this consideration, one surgeon entirely divided the hypoglossal trunk, with consequent permanent paralysis of its muscle-field, and did an end-to-end suture of its proximal stump with the distal portion of the paralyzed facial nerve, hoping thereby to get a more rapid and complete return of power by limiting the activity of the hypoglossal cortical center entirely to its control of the facial muscle-field.

It is hoped that the results reported herewith will give such evidence of surplus activity in the hypoglossal centers as to render this procedure unnecessary.

The first three cases referred to are the ones reported in the *Medical Record*.[1]

CASE 1.—*History.*—J. M., aged 6, had scarlet fever in the early summer of 1903, followed by otitis media and mastoiditis on the right side, for which an operation was done July 13 at

1. The photographic records in the early cases are very incomplete because of the difficulty of getting a photographer, the patient and some one to pose the patient all together at one time; the failure of certain amateur attempts; and a lack of appreciation of the value of certain poses.

Randall's Island Hospital. Three days later, beginning facial palsy appeared and rapidly progressed to complete paralysis. Three and one-half months later complete R. D. was found on electrical examination.

Operation.—On October 24, 1903, under chloroform anesthesia, operation disclosed the facial nerve soft, friable and gray in appearance; slight traction on it with the thumb forceps drew it out of the stylo-mastoid foramen without the necessity of dividing the nerve. (This fact was not stated in the previous report, but is recorded in the original notes on the case.) Two lateral sutures were inserted to implant its end in the slit in the hypoglossal. One of these pulled out through the substance of the facial nerve after both sutures had been tied, and not enough nerve was left to attempt to insert another.

Fig. 1.—Case 1. Before operation. Complete paralysis of right side of face.

Fig. 2.—Case 1. After operation, one week, showing deviation of tongue to right side.

Fig. 3.—Case 1. Four months after operation, showing symmetry of face during quiescence.

Fig. 4.—Case 1. Eight months after operation, showing beginning of voluntary movement at right angle of mouth and return of naso-labial fold.

As there was considerable tension on the remaining suture, a catgut suture was passed through the sheath of the hypoglossal nerve below the anastomosis, and then through fascia, so that when it was tied the hypoglossal was pulled up and outward, thus relieving tension at the anastomosis, which was still, of course, very unsatisfactory. Cargile membrane was wrapped about the junction and the wound closed. Primary union resulted.

Subsequent History.—There was almost complete palsy of the muscles supplied by the hypoglossal immediately after operation (Fig. 2). The resulting interference with phonation deglutition and mastication lasted for many weeks, although after ten weeks it had ceased to be annoying. The right side of the tongue, while it has regained its full range of motion, has always remained somewhat smaller than the left side (Figs. 6 and 10). Because of the unsatisfactory anastomosis the prognosis as to return of power in the facial field was distinctly unfavorable. However, systematic after-treatment was carried out with the following results: At the end of ten weeks there was distinctly less asymmetry of the face and at four months the face was symmetrical during quiescence (Fig. 3). The muscles still showed R. D.

From this time there has been steady but slow improvement. Very slight voluntary movement appeared first at the corner of the mouth eight months after operation (Fig. 4). One year after operation the motion in these muscles was very distinct and much increased (Fig. 5). The tongue still protruded to the right side (Fig. 6), but less than immediately after operation (Fig. 2), and it could be voluntarily moved in all directions. The right side was distinctly smaller than the left. The patient was not conscious of any discomfort. Thirteen months after operation the eye could be almost completely closed and the corner of the mouth drawn well out toward the right ear (Fig. 7). These motions could also be done separately. There was voluntary motion in the corrugator supercilis. The patient could smile and show all the upper incisor teeth (Fig. 8). Thirteen months and three weeks after operation these motions were more pronounced (Figs. 9 and 10). Eighteen months after operation improvement was still continuing, most marked in the orbital and supraorbital regions. The eyelid works automatically in a nearly normal manner.

Fig. 5.—Case 1. One year after operation. Increased range of motion at angle of mouth; dimpling of chin.

Fig. 6.—Case 1. One year after operation. Tongue still deviates to right, but can be voluntarily moved in all directions.

Fig. 7.—Case 1. Thirteen months after operation. Closure of right eye (compare Fig. 1). Good contraction of face muscles. Each of these motions can be done separately and alone.

Fig. 8.—Case 1. Thirteen months. Almost symmetrical smile; emotional on left (normal) side; volitional on right (paralyzed) side.

At twenty-five months, improvement is still continuing. The laugh is more nearly symmetrical (Fig. 11). Power to elevate the upper lip is greater. (Compare Figs. 11, 12, 13, 15 with 2, 8 and 9.) Power to elevate the lower lip has appeared (Fig. 13). The frontalis is beginning to act slightly (Fig. 15). The corrugator supercilii is stronger (Fig. 16).

CASE 2.—*History.*—B. G., aged 45, in August, 1903, had severe pain in the right ear for two days, followed by complete paralysis of the right side of the face. Electricity, massage and

baths systematically used for three months elicited no evidence that power would return spontaneously. R. D. persisted in the muscles from the beginning.

Operation.—On Nov. 28, 1903, under ether anesthesia, anastomosis was made without any tension on the sutures. Primary union resulted.

Subsequent History.—Following operation, there was paralysis of the muscle field of the right hypoglossal nerve (Fig. 17). The tongue protruded to the right side and there were difficulties of speech, mastication and deglutition, as in the preceding case. After six weeks these difficulties had disappeared, although the tongue remained smaller on the right side (Fig. 18). For nearly two months this patient complained of moderate intermittent pains in the shoulder, neck and external ear of the right side. These were probably due to injury to the auricular branches of the cervical plexus during the operation, the pain being referred also to other branches than the ones injured.[2] Six weeks after operation, although R. D. still persisted, there was a distinct diminution in the amount of constant current which it was necessary to pass through the anastomosis to cause contraction in the facial field. Two weeks after operation the tongue deviated markedly to the right side, could not be voluntarily moved to the left, and the right side was noticeably smaller and more wrinkled. The paralysis of the face is evident from the staring eye, the absence of wrinkles on the right side as compared to the left, and the absence of the naso-labial fold on the right side (Figs. 17 and 18). Four months after operation (Fig. 18) the tongue protruded almost straight and had regained nearly normal range of motion. The face at rest had largely regained its symmetry and the naso-labial fold had reappeared. The opening of the mouth and protruding tongue prevent it from showing in the photograph.

Six months after operation (Fig. 20) a considerable amount of voluntary motion had returned at the angle of the mouth and somewhat less in the right palpebral region. This side could be worked independently of the other. Note the diminished palpebral fissure. When an attempt was made to use both sides of the face at once, to show the teeth (Fig. 19), the left side was so much stronger as to pull the right side over and reproduce an appearance of paralysis.

After six months the patient disappeared and has been lost to observation in spite of repeated efforts to trace her. From the progress made in six months it is probable that her present showing would be very satisfactory, especially since the major part of her improvement occurred between the fourth and six months of the time that she was observed.

CASE 3.—L. M., aged 26, had complete right facial palsy following a mastoid operation done eighteen months previously. There had been no spontaneous improvement.

Operation.—On Dec. 22, 1903, Dr. Weir, assisted by Dr. Taylor, performed the operation, using ether anesthesia. The operation went smoothly and was followed by primary union. Paralysis of the hypoglossal muscle-field and the pains complained of by B. G. (case 2) followed operation in this case, but disappeared after a number of weeks.

Further Remarks.—This patient came very irregularly for after-treatment, and about three months after operation moved out of the city. In January, 1905 (thirteen months after operation), she reappeared for inspection. Although she had entirely neglected the instructions as to after-treatment, the result was still pretty satisfactory, as indicated in the photographs (Figs. 21 and 26).

In this case swallowing was accompanied by a slight grimace of the right side of the face, correlated motions analogous to those of the face and shoulder in faciospinal accessory anastomosis.

Figure 21 shows the face in natural pose before operation; Figure 22, the degree of closure of the eye; Figure 24, taken thirteen months after operation, shows the return of symmetry during repose, with normal naso-labial fold and frontal wrinkles (compare Fig. 21); Figure 25 shows the power to close completely the eye and retract the right side of the mouth (compare Fig. 22); Figure 26 shows separate control of the right side of the mouth and face; Figure 23 shows recovery of the tongue from its paralysis and the power to protrude it well over to the left side.

In all three cases paralysis of the hypoglossal muscle-field was an immediate sequel to the operation and persisted for a number of weeks. This was undoubtedly due to traumatism inflicted on the hypoglossal at the time of operation. To minimize this injury a set of special instruments was designed[3] and used in the later cases with very satisfactory results.

CASE 4.—*History.*—Mrs. M. J. had had complete facial paralysis (Bell's palsy) of the left side of the face for twelve years, with the deformity shown in Figures 27 and 28. There was marked atrophy of the muscles. There was some reaction to the galvanic current at the left corner of the mouth. (Complete R. D.) The left eye was painful on continued use, and there was increased lacrimation with an annoying overflow on to the cheek.

Operation.—On Jan. 7, 1905, under ether, the usual operation was done and the nerves were approximated without tension. Although the palsy had existed twelve years, the trunk of the facial nerve appeared normal in size, color and consistency. A small segment was taken for microscopic examination. This was the first case in which the special instruments were employed, and after operation the patient had none of the hypoglossal palsy which was so annoying in the preceding cases. There was numbness of the left ear, and some of the pains noted in the preceding cases were experienced. The wound healed by primary union.

Subsequent History.—Seven weeks after operation the face felt different and more comfortable than it did before operation. Lacrimation was distinctly less annoying and the eye was less troublesome. The patient and her friends thought that the face was becoming more symmetrical and that the eye could be more completely closed, but a careful inspection failed to verify that fact.

Fifteen weeks after operation the asymmetry was slightly lessened and the patient felt that the face was stronger. During the last few weeks of that period there has developed a slight but distinct atrophy of the left side of the tongue, so that it protrudes somewhat to the left involuntarily. Nevertheless the patient can move it in any direction at will. Five months after operation slight dimples could be formed in the chin voluntarily, but a successful photograph was not gotten till eleven months had passed. By this time the lower lip could also be slightly elevated (Fig. 31).

After a palsy lasting twelve years, so early a return of power, though only slight, promises much for the final result.

CASE 5 (referred by Dr. W. C. Phillips).—Miss I. C., aged 26, strictly speaking, can not be classed as an illustration of a case of facio-hypoglossal nerve anastomosis, but the attempt to do the operation developed certain facts that make it worth reporting in connection with the other cases.

History.—For twelve years this young woman had suffered from mastoid disease and had had some five operations. After one of the operations for an acute exacerbation eight years ago there appeared a complete facial palsy of the right side which has persisted. Also during one of the exacerbations several years ago there had developed a diffuse cellulitis of the upper part of the neck, which left a cicatrix covering the upper third of the right side of the neck. There was a small sinus back of the auricle leading into necrosed bone.

Operation.—The attending otologist requested that the nerve anastomosis should be done immediately after he had removed the diseased bone, in order that one anesthesia should answer for both purposes. After a careful cleansing of the field the usual operation for the anastomosis was started. After a painstaking dissection, which lasted an hour, involving exposure of the stylomastoid foramen, it became evident that the trunk of the facial nerve was not present. Moreover, the upper

2. In Case 6, where this nerve was retracted instead of divided, these pains did not appear.

3. Med. Record, March 4, 1905.

third of the sternomastoid muscle was lacking. It, therefore, seemed probable that the diffuse cellulitis above referred to had caused the destruction of the nerve and muscle. The operation was abandoned.

Inasmuch as the patient had been under the anesthetic for two hours, it did not seem wise to attempt any modification of the operation, but in a similar case under favorable circumstances it would seem reasonable to attempt to expose the facial branches in the posterior part of the parotid (assisted by a needle electrode), and, if they were found, to reflect a portion or the whole of the hypoglossal or spinal accessory nerve and do an end-to-end suture.

CASE 6 (case referred by Dr. L. L. Mial).—John L. E., aged 19, had a complete left facial palsy after a mastoid operation which was done five and one-half months previously. The palsy was first noted twenty-four hours after operation and became complete forty-eight hours later. After the third month there seemed to be some slight improvement about the eye, but it was of short duration, and for six weeks before operation there was absolutely no progress; there was complete R. D., and the consulting neurologist gave an absolutely bad prognosis.

Operation.—On Feb. 14, 1905, operation was performed under ether anesthesia. The transverse process of the atlas was more than twice as large as usual and caused a distinct rounded prominence of the soft parts behind the angle of the jaw. This anomaly (which was bilateral) rendered the later steps of the operation exceedingly difficult. The great auricular nerve was identified and retracted instead of being divided as in the preceding cases. The facial nerve was readily identified. Around it and compressing it for a distance of a centimeter from the stylomastoid foramen was dense cicatricial tissue from which it was dissected with some difficulty and then it was divided at the stylomastoid foramen. This cicatricial compression would have caused a persistent palsy. The hypoglossal was exposed as usual, but because of the anomaly above mentioned it lay at the bottom of an unusually deep and narrow hole. The anastomosis was finally completed after much difficulty and considerable traumatism to the hypoglossal. The operation lasted two hours.

Subsequent History.—The patient reacted well and primary union resulted. From the considerable operative traumatism to the hypoglossal it was expected that a well-marked paralysis of its muscle-field would result, but happily this did not occur. There was a very slight degree of deviation of the tongue to the left, but it could be moved in all directions voluntarily. There was but slight disturbance of phonation and deglutition. There was loss of sensation in the upper part of the auricle. He returned home on the fifth day. Ten months have elapsed and there is no evidence of returning power.[4]

CASE 7 (case referred by Drs. Duel and Ledermann.)—Albert L., aged 28, had a complete left facial palsy following a mastoid operation in January, 1905. After eight and one-half months there was no evidence of returning power, and, as the probability was that the nerve had been divided at the mastoidectomy, nerve anastomosis was decided on.

Operation.—On Oct. 14, 1905, under ether anesthesia, part of the lower facial canal was removed and the nerve divided. Even so it was somewhat shorter than was desirable. The anastomosis was carried out in the usual manner, except that no Cargile membrane could be wrapped about the junction. The operative result could be classed only as fairly satisfactory.

Postoperative History.—The recovery was good and primary union resulted. The day after operation the tongue deviated slightly to the left and there was slight interference with swallowing. A week after operation the tongue could be voluntarily moved in all directions, although its left side looked somewhat smaller than the right. One month after operation the excessive lacrimation of the left eye, which had been present before operation, ceased, and the left side of the face "felt different and stronger." Ten weeks after operation the face looked very slightly less asymmetrical. The tongue, while smaller on the left side, is freely movable in all directions. The diminished lacrimation and improved facial symmetry indicate a probably favorable result.

In the third, fifth and sixth cases there was considerable cicatricial tissue below the mastoid tip surrounding the facial trunk after its exit from the stylomastoid foramen. To identify and free the facial nerve under these conditions is a delicate and tedious task. In future similar cases it would seem a more certain and rapid procedure to expose the facial nerve in the lower part of its canal by removing some of the mastoid bone and then to follow the identified nerve through the cicatricial tissue to the parotid gland.

In other cases where the facial trunk is short, later experience teaches that to expose the lower part of the facial canal by the removal of the overlying bone is the quickest and surest way of obtaining a proper length of facial trunk. The amount of bone removed is small and there is no resulting deformity.[5]

RESULTS.

Immediate.—1. Mortality absent and shock very slight.

2. A well-marked paralysis of the hypoglossal nerve was present in the first three cases, with disturbed phonation and deglutition. These disturbances disappeared after from six to ten weeks, though moderate unilateral atrophy of the tongue persisted.

In the fourth, sixth and seventh cases the evidence of hypoglossal damage was very slight and showed only by the least deviation of the protruded tongue to the paralyzed side.

3. Each case healed by primary union. The scar was small and not very noticeable.

Remote.—1. A moderate hemiatrophy of the tongue has persisted in Cases 1, 2 and 3, though in each case the power to move the tongue in all directions has returned and the patients are conscious of no inconvenience. In Cases 4 and 6 after three months and in Case 7 after two months there appeared some atrophy of the tongue on the paralyzed side, but without loss of voluntary control or sensible inconvenience to the patient. The explanation of this delayed atrophy is not yet clear.

2. Voluntary motion to a very satisfactory degree has returned in Cases 1, 2 and 3. In Case 1, because of the unsatisfactory conditions found at operation, but little was to be hoped for, and yet by faithful attention to the details of after-treatment the patient has made such progress in twenty-five months that nearly complete return of power is to be expected ultimately (Figs. 1-16).

Case 2 made rapid progress toward the return of power between the fourth and sixth months, after which time she disappeared from observation and could not be located again (Figs. 17-20).

Case 3, without paying any attention to after-treatment, came back at the end of thirteen months with a considerable return of voluntary control over the face (Figs. 21-26).

Case 4, though paralyzed for twelve years and with badly atrophied muscles, yet showed beginning return of power around the chin and corner of the mouth at the end of five months, and this power is steadily, though slowly increasing and extending (Figs. 27-32).

4. In reading the proof of this article, we are able to add the following memorandum: February 12, one year after operation, the patient was seen again. Distinct voluntary motion has appeared in muscles of chin, lower lip and about the angle of the mouth.

5. Dr. Chas. H. Frazier of Philadelphia, and Dr. A. B. Duel of New York each made this suggestion in conversation with the authors.

Case 6, at the end of ten months, had not shown any return of voluntary power (but see Footnote 4 in this connection).

The improvement in the face after the nerve anastomosis follows certain interesting lines. First, the patient notices, in from three to six weeks, that the eye of the paralyzed side feels more comfortable and that lacrimation is less annoying.

Second, in from six to twelve weeks, the patient and friends notice that the face is less asymmetrical in repose and, in from three to five months after operation, almost perfect symmetry in repose is present, except in those cases where the muscles have markedly atrophied during a prolonged palsy. During this period the strength of galvanic current required to cause contraction in the facial muscles when the electrode is placed over the nerve anastomosis steadily decreases.

Third, in from five to eight months, voluntary motion appears, first about the corner of the mouth and in the chin, and then later extends to the muscles above, involving, last of all, the eyebrow and forehead muscles. It is worthy of note that improvement continues over a very long period of time. After twenty-five months

Fig. 9. — Case 1. Thirteen months and three weeks. Improved smile.

Fig. 10. — Case 1. Thirteen months and three weeks. Tongue voluntarily protruded to left.

Fig. 11.—Case 1. Twenty-five months. Improved elevation of angle of mouth in smiling, showing teeth and gums on right side.

Fig. 12.—Case 1. Twenty-five months.

Fig. 13.—Case 1. Twenty-five months. Elevation of lower lip; accentuation naso-labial fold.

Fig. 14.—Case 1. Twenty-five months. Closure of eye. Marked movement in face and chin muscles.

Fig. 15.—Case 1. Twenty-five months. Beginning motion in right frontalis muscle.

Fig. 16.—Case 1. Twenty-five months. Motion in right corrugator supercilli muscle.

Fig. 17.—Case 2. Two weeks after operation, showing deviation of tongue to right (paralyzed) side.

Fig. 18.—Case 2. Four months after operation, showing protrusion of tongue nearly normal.

Fig. 19.—Case 2. Six months after operation. In attempt to show teeth the normal side is so strong as to pull the paralyzed (right) side of the face over.

Fig. 20.—Case 2. Six months. Volitional movement of right (paralyzed) side of face alone showing separate control of it.

Case 1 is still adding to the number of muscles as well as the range of motion under his control.

The results thus far reported by various authors (see footnote on page 862) place the relief of facial palsy by nerve grafting among the standard surgical procedures.

Fig. 21.—Case 3. Before operation.

Fig. 22.—Case 3. Before operation.

Fig. 23. — Case 3. Thirteen months after operation, showing power to protrude tongue to left (normal) side.

Fig. 24. — Case 3. Thirteen months after operation Face symmetrical at rest.

Fig. 25. — Case 3. Thirteen months. Complete closure of right eye; some action of right corrugator supercilli, and marked voluntary movement of right side of face.

Fig. 26. — Case 3. Thirteen months. Dimpling of chin, and face movements dissociated from those of eye and forehead, showing separate control.

Fig. 27.—Case 4. Before operation. The pouching of the left side of the face is due to a very considerable atrophy of the muscles.

Fig. 28.—Case 4. Before operation. The pouching of the left side of the face is due to a very considerable atrophy of the muscles.

Fig. 29.—Case 4. Before operation. The pouching of the left side of the face is due to a very considerable atrophy of the muscles.

Fig. 30.—Case 4. Eleven months after operation. Very slight improvement in the symmetry of the face at rest.

Fig. 31.—Case 4. Eleven months. Showing marked voluntary dimpling of chin and elevation of lower lip.

Fig. 32.—Case 4. Eleven months. Protrusion of tongue in straight line.

DISCUSSION OF METHODS.

The chief questions open to discussion relate to (*a*) the choice between the spinal accessory and the hypoglossal nerves as the source of new power for the facial; (*b*) the choice between the end-to-end suture of the divided nerves (divided in part or in whole) and the lateral implantation method; (*c*) the choice of time after the onset of the paralysis when the operation should be done.

(*a*) Until 1902, in the great majority of cases, the spinal accessory nerve was used, but since that time most operators have turned to the hypoglossal as a more satisfactory source of power.

In all the "accessory" cases noted, there have been associated movements between the shoulder and the face

muscles which have resulted in unsightly grimaces and distortions. Ballance and Stewart and some others report that, after a long interval of time, patients can dissociate the two groups of movements by persistent effort and re-education of the cortical centers. This objection, therefore, is somewhat less valid than it was primarily supposed to be.

During the last three years the hypoglossal has chiefly been used to innervate the facial because of the more intimate relations, both anatomic and physiologic, of their centers in the cortex, as well as in the medulla. Moreover, the muscle fields of these two nerves are most intimately correlated in their activities.

The advantages, indicated by these theoretical considerations, seem to be derived in actual practice from the use of the hypoglossal nerve, if one judges by a comparison of the reported results in the two series of cases. Moreover, Ballance and Stewart, who report the largest number of "accessory" anastomoses, state that in future they shall use the hypoglossal nerve.

The theoretical considerations certainly would seem to favor transverse section of whichever nerve is chosen, followed by end-to-end suture of its proximal stump to the distal portion of the paralyzed facial. One would expect a more rapid and complete nerve regeneration and a corresponding improvement in the muscle-field. Moreover, the period of re-education of the cortical centers would be presumably diminished, since they would attend only to the demands of one muscle-field, instead of dividing responsibility, as they do in cases of lateral implantation.

However, in the cases reported, the results have shown no material advantages in favor of the end-to-end suture, which, on the contrary, has certain decided drawbacks. Whether the accessory of the hypoglossal is used, there is complete and permanent paralysis of the corresponding muscle-field. When the accessory is used, the trapezius and sternomastoid or trapezius alone (according as the whole or only the trapezius portion of the nerve is divided) are paralyzed, soon atrophy, cause drop shoulder and a marked asymmetry which is especially conspicuous in women wearing low-cut gowns.

Where the hypoglossal is cut, the difficulties with phonation, mastication and deglutition noted in the early weeks of our cases must become permanent, although the patient may so adapt himself to his new conditions as to avoid much of the discomfort incident to his disability. To justify itself, this method must show very distinct advantages over others in results, and, as previously stated, it has failed to do so in the cases reported up to date (January, 1906).

On the other hand, the lateral implantation method causes the minimum of additional damage to the patient, and the results have been very satisfactory in nearly every case (see especially Figs. 1-16). The technical difficulties of this operation are slightly greater.

To those who prefer the transverse section, followed by end-to-end suture, the suggestion is made (Taylor) that the distal end of the accessory or hypoglossal, whichever may be used, be anastomosed by lateral implantation into the nearest spinal motor nerve root. This would add but little to the time and difficulty of the operative procedure and would save the corresponding muscles from permanent paralysis.

(*c*) The interval of time which should be permitted to elapse between the onset of paralysis and the operation is the subject of wide diversity of opinion among authors.

The minimum interval mentioned is four months (Spiller and others), while many think that at least a year should elapse. Other things being equal, everyone must agree that the early operation has all the advantages. The one reason for conservatism is the great possibility of spontaneous recovery. Until the study of a large number of cases shall give us a method by which an early prognosis may be arrived at with a considerable degree of precision, there can be no scientific basis for the selection of these cases for operation.

For present purposes an interval of a year might be allowed, for by that time returning motion would have appeared in the vast majority of cases where spontaneous recovery would occur. In cases where the nerve is divided and perhaps a segment removed, as in gunshot injuries, operative procedures, etc., obviously the anastomosis should be done at once.

On the other hand, there is no fixed time during the course of a paralysis after which nerve anastomosis is contraindicated, for cases are reported where returning power has followed anastomosis after the paralysis has persisted from twelve to twenty-nine years. As long as the paralyzed muscle tissue has not completely atrophied and entirely changed to connective tissue there is a possibility of success.

In every case, regardless of other considerations, both before and after operation, the paralyzed muscles should be kept in the best possible condition by means of massage, electricity, etc., in order that returning nerve power may find good muscle to work on.

The literature of the subject to which we would refer is as follows:

1. C. A. Ballance, H. A. Ballance and Purves Stewart: British Medical Journal, May 2, 1903.
2. Ballance and Stewart: Healing of Nerves.
3. Faure and Foret: Gazette des Hôpitaux, March 8, 1898.
4. Barrago Ciarella: Il Policlinico, February, 1901. Reviewed in Centralbl. f. Chir., vol. xxviii, p. 718, 1901.
5. Manasse: Archiv. f. klin. Chir., vol. lxii, p. 805, 1900.
6. Kennedy: Philosophical Transactions of the Royal Society; series B., vol. excix, pp. 127-162.
7. Breavoine: Travail. Neur. Chir., p. 92, 1901.
8. Hackenbruch: Bericht über die Verhandlungen der Deutsch. Gesell. f. Chir., Kongress, vol. xxxii, 1903, p. 46. Archiv. f. klin. Chir., vol. lxxi, pp. 631-638, 1903.
9. Gluck: Centralbl. f. Nervenh. und Psychiat, vol. xxvi, pp. 404-409, 1903.
10. Faure: Bull. et Mem. Soc. de Chir., Paris, No. xxix, 830-849, 1903.
11. Nicoll: Lancet, vol. ii, p. 956, 1903.
12. Cushing: Annals of Surgery, May, 1903.
13. Körte: Deutsche Med. Woch., April 23, 1903.
14. Frazier: University of Penn. Med. Bulletin, November, 1903.
15. W. W. Keen: Jour. Nerv. and Mental Diseases, vol. xxx, p. 368, 1903.
16. Taylor and Clark: Medical Record, New York, Feb. 27, 1904.
17. Munch, F.: Semaine Médicale, No. xxiv, pp. 73-75, 1904.
18. Alexander, G.: Archiv. f. Ohrenkr., Leipzig, vol. lxii, pp. 1-10, 1904.
19. Bardenheuer: Münch. Med. Woch., vol. ii, p. 1273.
20. Villar, F.: Gaz. hebd. d. sc. Med. de Bordeaux, No. xxv, pp. 66-68, 1904; Bull. de Laryng., Otol. et Rhinol., Paris, No. vii, p. 186, 1904.
21. Bockenheimer, P.: Archiv. f. klin. Chir., vol. lxxii, pp. 461-486, 1903-04.
22. Babinski: Journal de Med. In., Paris, vol. ix, p. 275, 1905.
23. Minor, L.: Monatschr. f. Unfallheilk, Leipzig, vol. xii, 1905.
24. Barth, E.: Zeitschr. f. Ohrenheilk., Wiesbaden, vol. l, 1905.
25. Gluck, T.: Zeitschr. f. Diätet und Physik. Therapie, Leipzig, vol. ix, pp. 24-30, 1905.
26. Stewart, P.: Westminster Hops. Reports, No. xiv, pp. 40-53, 1905.
27. Sick: Deutsch. Med. Woch., vol. xxxi, p. 652, 1905.

Rest in Inflammation.—Physiologic rest is of infinite importance and is always indicated in acute inflammation. In the exercise of function blood is taken to a part and an existing inflammation is aggravated.—Brainard, in *Journal Michigan State Medical Society.*

A CLINICAL STUDY OF MIXED INFECTION IN TUBERCULOSIS.

PRELIMINARY REPORT.*

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One of the many debatable questions in tuberculosis is that of mixed infection. Some observers account for nearly all elevations of temperature which pass beyond a very moderate limit as being due to a mixed infection. Others, on the contrary, question whether the advent of other bacteria into the field of tuberculosis has anything to do with the production of the fever, even that of the hectic type.

Many bacteria besides the tubercle bacillus are found in tuberculous sputum. The various pus organisms, especially the streptococci, are commonly present. That these various organisms are found in the sputum is not sufficient ground for associating them with the tuberculous process, for they may have come from the mouth, throat or other portions of the respiratory tract. To obviate this possibility of error Pfeiffer[1] suggested that the particles of sputum for examination be taken from the center of the mass of sputum. Kitasato even went further and washed the sputum mass in sterile water before the sample for examination was taken.

Other observers, as Petruschky,[2] Fraenkel[3] and Schroeder and Naegelsbach,[4] examined the blood to see if it contained the organisms. These examinations usually proved to be negative. It is only rarely that the various organisms mentioned in connection with tuberculosis are found in the blood, and when found it is usually in the blood taken after death, and it is highly probable that they passed into it during the hours immediately preceding death.

Still other observers, as Ortner,[5] Sata,[6] Schabad,[7] Cornet[8] and Kitasato,[9] made cultures from the walls of cavities after the death of the patient. In some instances these cultures were taken almost immediately after death, to prove that the organisms were there during life and that they had not come from other parts of the air passages after the death of the patient.

This method revealed about the same varieties of organisms as were found by the examination of the sputum. The pus organisms, especially streptococci, were most commonly found. Staphylococci, penumococci, influenza bacilli and pseudo-diphtheria bacilli were present less commonly. In some instances no other organisms than the tubercle bacillus were found.

The important fact to be borne in mind in these observations is that these various organisms were found not only in the air passages and cavities present, but also in the lung tissue beyond; some, as Ortner, even noting them in the tissues which had not yet been invaded by the tubercle bacillus.

Some idea of the frequency with which other organisms associate themselves with the tuberculous process may be gained from the following: Ortner found an organism which he named micro-coccus-pneumoniæ, but which later proved to be a streptococcus in twenty-eight out of forty-two examinations. Pasquale[10] found streptococci in the sputum every time in eighty-two cases. Schroeder and Mennes,[11] in twenty-one cases of tuberculosis in all stages, made thirty examinations of sputum and found streptococci twenty-nine times, staphylococci seventeen times and pneumococci fifteen times.

The important question to decide is what part these various organisms, which are found in so large a percentage of the cases of advanced tuberculosis, play in the pathologic processes present.

The mere presence of these organisms in the sputum, cavities and tissues of the lung does not prove that they play a part in the destructive process; however, the clinical picture of what is usually termed a well defined case of mixed infection, with its chills, "hectic" temperature, profuse sweats and general prostration, is similar to that of a severe streptococcic infection. The various culture products made from the tubercle bacillus will produce, for the most part, these same symptoms, and this makes it very difficult for us to decide whether the severe symptoms accompanying so-called mixed infection are due to the tubercle bacillus or the accompanying organisms or to a combined action of the two. The necrosis and liquefaction which accompanies the tuberculous process could also be produced either by the tubercle bacillus alone or by other organisms or by a combination of them. Some claim that the destruction produced by the tubercle bacillus and its toxins is always a dry process, and that when we find a purulent discharge it shows that pus organisms, especially streptococci, have entered the field; while others, as Meissen,[12] say there is not a single symptom or condition present in so-called mixed infection that could not be produced by the tubercle bacillus alone. Those of us who have had considerable experience with the use of tuberculin and other culture products and have had the opportunity to study the physiologic effects of this remedy, as seen in the tuberculin reaction, can readily believe this statement. There is some difference, however. When we have a tuberculin reaction the patient experiences aching of the limbs, back and head, more or less severe, which closely resembles the symptoms accompanying la grippe and which is not so common in cases of so-called mixed infection. There is also a certain nervousness accompanying and preceding this aching which is not usual in the so-called mixed infection.

Having had considerable experience with tuberculin, we were inclined to lay little stress on the effect of other bacteria, and believed that the hectic fever of phthisis, with its accompanying symptoms, the same as that of less degree, was due to the absorption of the tox-

* Read at the International Tuberculosis Congress, Paris, Oct. 2-7, 1905.

1. Pfeiffer: "Die Mischinfektion bei der Tuberkulose." Bericht über den Kongress zur Bekaempfung der tuberkulose als Volkskrankheit, Berlin, 1899.
2. Petruschky: "Tuberkulose und Septicaemie." Deutch. med. Woch., 1893, No. 14.
3. Fraenkel: "Ueber die Bedeutung der Mischinfektion bei Tuberkulose." Berlin klin. Woch., No. 16, 1898.
4. Schroeder and Naegelsbach: "Bakterienbefunde im Blut von Phthisikern." Münch. med. Woch., Nos. 41 and 42, 1899, und Beitraege zur Kenntniss der Lungentuberkulose, Meissen, 1901.
5. Ortner: "Die Lungentuberkulose als Mischinfektion." Wien. Leipsig, 1893.
6. Sata: Zeit. fur Tuberkulose u. Heilstaettenwesen, 1902, vol. ii, No. 1.
7. Schabad: "Mischinfektion bei Lungentuberkulose." Zeit. f. klin. Med., vol. xxxiii, Nos. 5 and 6, 1897.
8. Cornet: "Ueber Mischinfektion bei Lungentukerkulosis." Wien. Med. Woch., 1892, Nos. 19 and 20.
9. Kitasato: "Gerwinnung von Reinkulturen der Tuberkel bacillen und anderer pathogener Bakterien aus Sputum." Zeit. f. Hygiene, 1892, vol. ii, No. 3.
10. Pasquale: "D. Streptokokk bei d. tuberk. Infeckt.," Zt. f. B. u. p., vol. xvi, p. 114.
11. Schroeder and Mennes: "Ueber die Mischinfektion bei der Chronischen Lungentuberkulose." Bonn, 1898.
12. Meissen: Beitraege zur Kenntniss der Lungentuberkulose. Wiesbaden, 1901.

ins of the tubercle bacillus together with certain products of destroyed tissue.

In the winter of 1903 our attention was called to the beneficial effect of streptolytic serum in cases of streptococcic infection, and it was determined to use it in cases of so-called mixed infection in phthisis to see if it would have any effect on the temperature. Its use was limited to cases in which the streptococci were found in the sputum, taking the sample according to Pfeiffer's method, after having had the patient rinse the mouth thoroughly before furnishing the sample. Ten patients in all were treated and the serum was advised in two other cases in consultation. The serum was used subcutaneously, usually beginning with 20 c.c. and following with 10 c.c. a day. In several of these cases the injections were continued until the streptococci disappeared from the sputum, while in others they were stopped on account of the severe reactions which followed. In some instances the urticaria was very severe; in others severe pains manifested themselves in the joints, while in still others purpura developed. In one case a cyanosis appeared and a fatal outcome was feared, but after a few hours the patient was restored to her normal condition and no bad effects seemed to follow.

These results were very encouraging, in spite of the severity of the accompanying symptoms. When the treatment could be carried out for a satisfactory period there was a diminution, and in several instances an entire disappearance of the streptococci. Simultaneous with the disappearance of the streptococci in several instances there was an abatement of the symptoms. The fever lowered, the chills ceased and the patient began to improve. There was a change in the character of the sputum in all cases. It became thinner, less in amount and less purulent in character. In some cases, in spite of the diminution and disappearance of the streptococci, the symptoms did not abate. In these cases we were inclined to believe that perhaps the continuation of the fever was due either to the toxins of the tubercle bacillus or the absorption of necrotic tissue.

This experience led us to believe that this remedy had a specific action on streptococci. While all our patients were not relieved of their troublesome symptoms, yet there were sufficient successes to be more than suggestive of the value of the remedy. The great drawback to its administration, however, was the severe reaction manifested by such conditions as urticaria, pains in the joints and purpura. On this account we ceased using it until we learned that it could be given by the bowel. Since then we have taken up its administration again.

Certain investigators, as Ortner, Cornet and Spengler, demonstrated that streptococci are found not only in the sputum and the cavity contents, but also within the lung tissue beyond the areas of necrosis. It was also found that the association of these bacteria was not always productive of temperature.

The following questions suggested themselves:

1. Are the symptoms accompanying so-called mixed infection due to the presence of other organisms, especially the streptococcus, as is generally believed?

2. If the streptococcus is responsible for these symptoms it must be present before they manifest themselves, and would it not be the part of wisdom to treat mixed infection before these threatening symptoms appear?

3. If the streptolytic serum is active against the streptococcus, by its administration in cases where streptococci have not been found in the sputum, or in cases where they might be found, yet are producing no symptoms commonly attributed to them, we might be able to demonstrate whether or not there is an early mixed infection without marked symptoms and also to gain some idea as to what part the streptococcus plays in the pathology of the disease.

In order to throw light on these important questions we have carried out a series of experiments on twenty patients at the Pottenger Sanatorium for Diseases of the Lungs and Throat. The injections were all given by the bowels and produced no inconvenience, except in one case there was some soreness of the finger joints. We hope to carry on our investigations during the coming year, but believe that our results so far warrant this preliminary report. We make it in the hope that it may stimulate others to investigate this important subject. A study of the varieties of streptococci which complicate tuberculosis shows them to be of very low virulence. The use of cultures from these sources might produce a serum which would be more active against these low-grade cocci than that produced by the ordinary virulent germ, and we would suggest its trial.

The results of our use of the serum are shown in the table. In presenting these cases we will state that those who had been in the sanatorium for a period of time before beginning the use of streptolytic serum had received such treatment as had seemed to be indicated, and during the administration of the serum in all cases such other treatment was administered as seemed best. The serum was administered to all cases daily, *per rectum*, between and including the dates given.

In selecting cases all excepting the last two in the table had a temperature range of 100 or more.

The twenty cases reported herewith were selected from ninety-seven cases under treatment in the sanatorium from March 20 to August 1, 1905, and included the most unfavorable as regards final recovery, although some of those which terminated fatally were most pronounced in responding to the action of the serum by showing amelioration of the symptoms attributable to the streptococcus.

The findings by the microscope have been disregarded in this report. Streptococci were found in the sputum in a number of cases before beginning the use of the serum and were not found subsequently, but the investigations were undertaken depending solely on clinical data.

Believing that streptolytic serum does have at least a certain degree of specific action in streptococcic infection, we endeavored to note the effect on the symptoms and clinical course of the disease which followed its administration. It will be noted that in nearly every case there was a change in the sputum. It became thinner, less purulent and usually diminished in amount. Some of our cases had been in the sanatorium for some time, but were not doing well; others were cases which had just been admitted, but were in bad condition. We had hoped to try it also on favorable cases, but did not in these experiments. There was an improvement noted in the general condition of 17 or 85 per cent. of those treated.

It might be argued that this improvement was due to the hope aroused by the treatment, but such was not the case, for many of the patients had been under treatment and had had many things done for them; others positively objected to the treatment because of the annoyance, while none knew what we expected to accomplish, so the mental stimulus can safely be eliminated.

The administration of foreign serum has some stimulating properties and will sometimes aid the organism in throwing off the disease and might have had some influ-

CASES ILLUSTRATING USE OF STREPTOLYTIC SERUM.

Brief History. Time of Admission.	General Condition Beginning Use of Streptolytic Serum.	Time Serum Used and Dose.	Results.
Case No. 1.—Admitted Mar. 3, 1905. Third stage involvement; extensive areas in both lungs, also involvement of larynx, pharynx and digestive tract. Temperature range to 104. Symptoms of marked general infection.	Some amelioration of severe symptoms; temperature range less; expectoration less in quantity; continued tenacious and purulent; temperature 102.5.	Mar. 20 to Apr. 2, 10 c.c.	Expectoration somewhat lessened in am't, thinner and raised with less effort, temperature range slightly decreased; some apparent amelioration of general symptoms. Patient discharged unimproved.
Case No. 2.—Admitted Jan. 9, 1905, in advanced stage; both lungs involved.	Condition of lungs improved; temperature range continued to go above 100 at frequent intervals; expectoration profuse and tenacious.	Apr. 15 to May 3, 10 c.c.	Sputum became thinner and lighter in color; less purulent; range of temperature less; general condition improved. Patient discharged improved.
Case No. 3.—Admitted Feb. 22, 1905. In advanced stage.	Had shown practically no improvement since admission.	Apr. 15 to May 20, 10 c.c.	Condition of patient during stay at sanatorium improved but slightly.
Case No. 4.—Admitted February, 1904. In second stage, also lupoid involvment of anterior nares, extending to upper lip, soft palate, pharyngeal wall, epiglottis and arytenoids.	Had treated since admission with culture products and violet rays. Susceptibility to culture products very marked. Temperature range above 100 frequently; condition of lungs and lupoid patches much improved.	Apr. 15 to Apr. 17, 10 c.c.	Swelling and aching of joints manifest. Serum discontinued.
Case No. 5.—Admitted Mar. 18, 1905. Second attack; marked involvement of upper portion of both lungs and intestinal tract; temperature 103.	Marked improvement; temperature range above 100 frequently; expectoration profuse and tenacious.	Apr. 15 to May 3, 10 c.c.	Expectoration thinner, less purulent and less in quantity; subsequent improvement more rapid.
Case No. 6.—Admitted Feb. 10, 1905. Advanced stage in lungs and intestinal tract.	Improvement of general symptoms; temperature range above 100; expectoration profuse and tenacious.	Apr. 15 to May 3, 10 c.c. May 8 to June 6, 10 c.c. July 7 to July 30, 20 c.c.	Sputum decreased, became thinner and less purulent. Following use of serum the first time, there was marked general improvement, which continued for several days, when it was again used with more marked improvement. Following its use the third time with larger dosage, improvement was still more marked and continuous.
Case No. 7.—Admitted Feb. 25, 1905. Involvement of both lungs; previous history of severe pleuritis with effusion; infiltration arytenoids.	Had made marked improvement since admission: severe attack of pleuritis and effusion, left side, developed.	May 3 to May 25, 10 c.c. May 6 to June 5, 10 c.c.	Amount of sputum markedly decreased, thinner and less purulent. General condition much improved.
Case No. 8.—Admitted May 5, 1905. Advanced stage, both lungs; temperature had been ranging as high as 105; expectoration profuse and purulent from large cavities; general symptoms of severe infection.	. . . . .	June 21 to July 5, 20 c.c.	All symptoms greatly improved; expectoration became thinner, less purulent; much less in amount and was raised much easier; temperature dropped to less than 100 F. Progress satisfactory, until extensive breaking down of left lung, which was followed by death of patient. Improvement appeared most marked during the use of streptolytic serum.
Case No. 9.—Admitted Apr. 31, 1905. Had been treated the year previous with marked improvement; large cavity in left lung, also involvement of right lung; larynx involved.	Marked improvement; temperature above 100 at frequent intervals; expectoration profuse and tenacious.	May 28 to June 20, 10 c.c. June 20 to June 27, 20 c.c.	Expectoration decreased, thinner and less purulent; general condition improved more rapidly than before administration of serum; maximum temperature 99.5.
Case No. 10.—Admitted May 16, 1905. Advanced stage, both lungs; extensive fibrosis; high range of temperature, reaching frequently 104.	. . . . .	May 22 to June 7, 10 c.c.	Expectoration less in amount and less purulent; rapid amelioration of all symptoms; general improvement until June 7, when severe hemorrhage occurred, followed by death one week later.
Case No. 11.—Acute tuberculosis; temperature ranged as high as 105; other symptoms of very virulent infection; large cavity in right lung and involvment throughout both lungs, larynx and intestinal tract; expectoration purulent, exceedingly profuse and offensive.	. . . . .	May 27 to June 20, 20 c.c.	Rapid improvement of all symptoms, including diminution in quantity of sputum and lessening in its offensive character. June 20 a cavity formed in left lung; general re-infection. Patient died three days later.
Case No. 12.—Admitted May 16, 1905. Advanced stage; temperature 104.2; general condition showed marked infection.	Marked improvement in general symptoms; temperature still 100 to 101 almost daily.	May 28 to June 20, 10 c.c. June 20 to June 28, 20 c.c.	Amount of expectoration markedly decreased; less purulent and less tenacious; temperature range lower and general condition improved.
Case No. 13.—Admitted Aug. 30, 1904. Advanced stage.	Had made marked improvement under treatment, range of temperature 100 to 101 at frequent intervals.	June 4 to June 20, 10 c.c. June 20 to June 29, 20 c.c.	Sputum less in amount and less purulent; temperature range lower and improvement more rapid after beginning use of serum.
Case No. 14.—Admitted Mar. 10, 1905. Advanced stage; temperature 98 to 100.	Condition improved; range of temperature from 97 to 99.5; expectoration profuse, purulent and tenacious.	June 11 to June 23, 20 c.c.	Sputum less in quantity, thinner and less purulent; temperature range lower; nutrition improved.
Case No 15.—Admitted June 13, 1905. Advanced stage; both lungs involved; extensive infiltration and ulceration of pharynx, larynx and arytenoids; also involvement in digestive tract; temperature range 104.2: expectoration profuse, heavy and purulent.	. . . . .	June 14 to June 30, 20 c.c.	Sputum less in amount, thinner, less purulent and raised with less effort; temperature range lower: symptoms generally ameliorated. June 30 tubercular meningitis supervened; death in thirty-six hours.
Case No. 16.—Admitted July 1, 1905. Extensive involvement of both lungs, long standing; extensive fibrosis; temperature range 99 to 102; expectoration profuse, tenacious and purulent.	. . . . .	July 7 to Aug. 1, 20 c.c.	Expectoration less in amount, thinner and less purulent; temperature range lower; improvement in general condition slight.
Case No. 17.—Admitted June 25, 1905. Third stage involvement, both lungs; temperature range 98 to 103.8; expectoration profuse, purulent and tenacious.	. . . . .	July 7 to Aug. 1, 20 c.c.	Expectoration less, thinner, less purulent; general condition much improved.
Case No. 18.—Admitted July 20, 1905. Third stage involvement, both lungs, also larynx; temperature 103; expectoration profuse, tenacious and purulent.	. . . . .	July 20 to July 30, 20 c.c.	Expectoration less in quantity, thinner, less purulent; reduced temperature range.
Case No. 19.—Admitted Aug. 19, 1904. Third stage involvement, with cavities, upper lobe, both lungs.	Condition improved; temperature range below 100; expectoration profuse, very tenacious and purulent.	Apr. 15 to May 3, 10 c.c. May 28 to June 20, 10 c.c June 20 to June 28, 20 c.c.	Expectoration following first administration reduced in quantity, thinner and less purulent; same condition noted following its use the second time; more marked following increased dose; improvement continuous.
Case No. 20.—Admitted Dec. 27, 1904. Advanced stage, also laryngeal involvement.	Conditions of both lungs improved; slight improvement of larynx; expectoration profuse, tenacious and purulent; temperature range 98 to 99.	July 8 to July 23, 20 c.c.	Expectoration less in quantity, thinner and less purulent; general condition showed marked improvement and has since continued.

ence on the general improvement, but it could hardly be expected to have influenced in so marked a degree the character of the expectoration. It seems to us that such an influence can come only through some specific action on the elements productive of the expectoration.

From our studies and observations we would draw the following conclusions:

1. The results of various investigations show that streptococci are found in lung tissue beyond the areas of necrosis, and can be present without causing any acute symptoms, such as high fever, chills, etc.

2. The products of the tubercle bacillus are capable of producing symptoms very near, if not identical, with those of so-called mixed infection, and it is possible that these are sometimes due to the one cause, sometimes to the other, and perhaps at times to both working together.

3. That the streptococcus plays a part, at least in some cases of so-called mixed infection in tuberculosis, and that streptolytic serum has at least some specific action on the streptococcus as witnessed in the reduction of fever and abatement of symptoms in some of these cases of hectic type, and further, that the streptococcus plays some part in the general pathology of the tuberculous process of those chronic cases without marked symptoms (the earlier ones we have not yet investigated) as is shown by the altered character of the sputum, becoming thinner, less purulent and diminished in amount, and in the general improvement which follows the administration of the serum in nearly all cases.

4. The use of streptolytic serum in cases where no acute symptoms were present seemed to exert a favorable influence on the course of the disease sufficiently often to suggest that the presence of the streptococcus affects the tuberculous process unfavorably, even in many cases where it causes no active symptoms, and that mixed infection is a factor to be recognized and dealt with, before the advent of threatening symptoms, the same as tuberculosis is to be diagnosed and treated before the advent of consumption.

5. This field is worthy of further study and investigation, and while we do not feel justified in drawing any absolute conclusions, we feel that our results so far warrant a continuation of our investigations.

AUTOLYSIS.

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(*Continued from page* 778.)

Before concluding the review of the products resulting from proteid cleavage in the process of autolysis mention has to be made of the formation of plasteins. From the foregoing discussion it is apparent that great activity has been displayed in the study of degradation of the proteid molecule within the body and in the test tube, and an attempt has been made to explain the bearing the work had on our understanding of various physiologic functions. However, there was one great problem which inspired many workers in their labors and which remains unsolved by them. This was to discover a process by which proteid, the chief tissue component, could be constructed out of its simple components, and also to discover the mechanism which the organism employs to build up tissue proteid out of those fragments which are formed in the digestive tract. It has been stated before that the first phase in proteid digestion consists in converting native proteid, which is insoluble in boiling water, into products which are soluble both in hot and cold water. These products are termed albumose and peptone. Danilewski and his pupil, Okneff,[19] were the first to make the observation that when the soluble substances are exposed to the action of rennet ferment a substance arises which is insoluble in water. This substance was termed plastein. Kurajeff,[15] another student of Danilewski, has shown that the plasteins are formed by the action of autolytic enzymes also. It has been shown in recent years that enzymes possess a double function. They break up complex into more simple substances and again rebuild the original substances from the fragments. Hill made this observation on the enzymes digesting starch, and Kastle and Lowenhart[20] on that spitting fat. The first ferment is capable of converting sugar into starch and again starch into sugar; the second possesses the power of converting fat into fatty acids, and the acids into fat.

Attempts were made to ascribe a similar faculty to enzymes digesting proteids, and the plasteins were regarded by many investigators as reconstructed native proteid. The most emphatic supporter of this theory was Herzog.[21] He based his assumption on a very ingenious experiment. The viscosity of a dilute of native proteid decreases in course of digestion. On the other hand, the viscosity of a fairly concentrated solution of albumose exposed to the action of digestive enzymes increases. This, according to Herzog, may be explained by the reconstruction of proteid. However, if the digestive action of the enzyme is disturbed by the presence of an antiferment, the reconstruction fails. Very recently Kurajeff and his pupil, Grossman,[22] exposed digested plasteins to the action of autolytic enzymes and noted the formation of coagulable proteid, and they seem inclined to believe that this indicates a reversible action of the autolytic enzymes. Unfortunately the experiments of various writers on the subject contain many contradictions. While the primary albumoses are considered the mother substance of plasteins by some writers, Kurajeff noted the formation of plastein only from the secondary ones. Further, Bayer,[23] in Hofmeister's laboratory, found that plastein is formed from crystalline cleavage products.

In our own experiments, Stookey and I failed to find any evidence of reconstruction of the lower albumoses into coagulable proteid. By the action of rennet ferment on albumose it was possible to convert the solution into a solid jelly, which was very difficult to fractionate for purely mechanical reasons. If, for the experiment, a solution of albumose of moderate concentration was employed, it turned into a very thick syrup. In the original solution and the one treated with rennet the various albumoses were estimated. The time of treatment with rennet varied from 12 to 48 hours. In no instance was there observed any diminution in the quantity of the lower albumose or of the peptone. Thus there was no evidence of reversion of peptone into coagulable proteid, and it is extremely improbable that enzymotic synthesis of proteid can be made possible before the substances at present known as proteolytic enzymes are divided into their components. Cleavage of proteids by trypsin, pepsin or other proteolytic enzymes is a very complex process. Reversibility of action thus far is known to be a property of enzymes affecting a hydrolytic cleavage. In the course of proteid

19. Maly's Jahresb., vol. xxv.
20. Amer. Chem. Jour., vol. xxiv, 1901.
21. Zeitsch. f. phys. Chem., vol. xxxix, 1903.
22. Hofmeister's Beiträge, vol. v, 1905.
23. Ibid., vol. iv, 1904.

disintegration in the tissues and in the digestive tract, the primary products so rapidly suffer further metamorphosis that reversion on a large scale is scarcely imaginable. There might be other synthetical processes to which the organism resorts for the purpose of tissue construction.

It has already been stated that special attention has been directed to the study of the products of autolysis of nuclear material. Through the work of Fischer, it was established that the components of nucleic acid were closely related one to another and all of them, in turn, related to uric acid. In addition, the pathogenesis of many diseased conditions, and particularly that of gout, is closely associated with uric acid. Normally fresh organs contain the components of nucleic acid in a free state only in a very insignificant quantity. Schutzenberger, Salomon and Lehmann (the last working under Kossel) observed that yeast suspended in water and allowed to stand at body temperature gave rise to free nuclein bases, the fresh cells not containing the substances in a free state. Salkowski and his pupils, Schwiening and Biondi, made it certain that the appearance of the substances was due to an autolytic process. More recent investigations have made it clear that through autolytic action purin bases, as soon as they become detached from the complex molecule of nuclein, suffer complete decomposition. Statements to that effect were made by earlier observers, more recently by Kutscher. The observation of Dakin[24] is in harmony with this statement, although he could detect in autolyzed kidneys only one purin base, hypoxanthin. The correctness of the statements was demonstrated by my own investigations. Quantitative analysis of all purin bases present in the fresh and in autolyzed organs has made clear the destruction of nuclein bases in the course of self-digestion. Very recently also some information has been gained regarding the chemical process of their disintegration.

In living tissues only adenin and guanin are present in large quantities, while the other two purin bases are found in very insignificant quantities. Walter Jones[25] and I,[17] independently of one another, have shown that in the course of autolysis, these two bases are transformed into hypoxanthin and xanthin, respectively. The following table shows the contents of purin bases in 5 pounds of fresh and autolyzed spleen:

	Fresh spleen.	Self-digested spleen.
Adenin	1.85 gm.	0.0 gm.
Guanin	1.10 gm.	0.0 gm.
Hypoxanthin	0.30 gm.	1.2 gm.
Xanthin	0.40 gm.	0.150 gm.

Schittelhelm arrived at similar conclusions and has demonstrated further that under certain conditions the bases are transformed into uric acid. The other constituents of nuclein acid, the pyrimidin bases, undergo analogous changes.

The mechanism of this transformation was elucidated by the work of Jones.[25] This author accepts the presence in the tissues of two specific enzymes, one capable of acting on guanin and the other on adenin, and further of an oxidizing enzyme, the function of which it is to complete the transformation of nuclear material. The deductions of Schenck[26] are similar to those of Jones. Schittelhelm[20] has corroborated in a general way the conclusions of Jones. However, he does not support the assumption of the existence of more than one enzyme which can transform the amino-purins into the corresponding oxy-derivatives. According to Schittelhelm, the entire nuclear destruction is accomplished by three enzymes, one breaking up the nucleic acid into its components, the second splitting off the nitrogen from the nitrogenous constituents, and the third completing the oxidation of the purin derivative. It must be admitted that more detailed information concerning the intermediary products of nuclein metabolism is still wanting.

With this I wish to conclude the review of the products arising on autolysis of surviving organs. Reference should be made to the products of autolysis of sugar and fat, but thus far the investigations in that direction are few in number and the results obtained from them not very significant. This also concludes the review of autolytic action in normal organs. It remains to discuss these results in connection with the original problems which led to all these numerous investigations.

DISCUSSION OF RESULTS.

It has been stated already that the principal object of the work was: 1. To elucidate the nature and the mechanism of those chemical reactions which make the functions of the body possible. 2. To interpret the rôle of individual organs in the animal metabolism. 3. To study the intermediate products of metabolism, since there is a general agreement that by the accumulation in the organism of these substances many diseased conditions are occasioned.

The foregoing review leads one to the conclusion that the knowledge of intermediate metabolism has been furthered considerably. On the other hand, a comparative study of the products of disintegration of various organs fails to bring out marked differences among them, although, during life at least, some organs are known to be the seat of special chemical reactions. This leads one to the assumption that in the animal body the process of self-digestion does not control all chemical reactions occurring in organs, perhaps even not all the processes of disintegration. A most conspicuous instance illustrating this statement is found in the work in which Eck's fistula was employed. By this name is designated a fistula between the vena cava and the portal vein. The aim of the fistula is to exclude the liver from the portal circulation. The organism of the dog possesses a very intense power of burning uric acid; the acid is present in the urine of this animal only in traces, even after injection of two to three grams of the substance. Dr. Sweet and I have demonstrated that animals kept for weeks on a diet free from all precursors of uric acid excrete considerable quantities of it in the urine as soon as an Eck fistula is performed on them. The output is especially increased after the administration of the substance itself.

Evidently under these conditions the organism fails to disintegrate uric acid, although the process of self-digestion is not depressed in the tissues. Thus the mechanism of "burning" uric acid in the living organism is not known yet. Proteid combustion also in the normal living organism apparently is different from the proteid disintegration in the course of autolysis. The great mass of products in the process of self-digestion remains in the stage of nitrogenous acids. A small part of them lose their nitrogen and a still smaller part give rise to carbon dioxid. In the living organism the splitting off of nitrogen from proteid material is a very rapid process, and the transformation of all carbonaceous material to carbon dioxid also occurs with much

24. Jour. of Physiol., vol. xxx, 1903.
25. Ibid., vol. 31, 1904.
26. Zeitsch. f. phys. Chem., vol. xliii, 1904.

greater rapidity than it possibly could take place in course of self-digestion. But it has been stated that disintegration by the process of autolysis does occur during life. This and the foregoing are not contradictory one to another. Every tissue consists of cells of different age, of different states of nutrition and of different resistance. Work on hemolysis has brought out most clearly that individual blood cells vary in their vulnerability. Cells in a state of defective nutrition succumb to the process of self-digestion. In the course of that process enzymes are liberated which are capable of digesting extraneous material also.

It is difficult to demonstrate the correctness of this view on a complex organism, but it is made very clear from observations on the yeast cell. It is the function of that organism to convert grape sugar into alcohol. So long as conditions for this function are favorable there is little evidence of the process of self-digestion in a colony of yeast cells. But as soon as conditions are so altered as to make the normal life and the alcoholic fermentation impossible, a very active proteid-splitting enzyme is developed by the yeast cell which causes digestion of the cell proteid and of other proteid material. In the living organism the two forms of metabolism undoubtedly coexist. One is the result of the function of the organs, the other of their disintegration. The supply of energy required for the maintenance of life is furnished possibly by the first process. It has already been stated that by means of autolysis proteid is converted principally into amino-acids. By this conversion proteid could not furnish the organism with its full calorific requirement. On the other hand, autolytic enzymes may act on cell proteid and on the surrounding proteid in a manner similar to that of the enzymes of digestive glands, namely, rendering them a more suitable material for rapid combustion.

It is marvelous that, notwithstanding the presence of destructive agents in all tissues, organs succeed in guarding their integrity. A most clever investigation of recent years throws light on the mechanism by which this is accomplished. The integrity of the gastric wall, the function of which is to elaborate digestive enzymes, has been the cause of much speculation. Weinland[27] demonstrated that this was due to the presence of an antiferment in the digestive glands. In the blood also were found antitryptic substances by Hahn,[28] Landsteiner,[29] Glaessner[30] and Catchart.[31] The same property was noted in tissue extracts by Dr. Stookey and myself.[7] Furthermore, we have demonstrated that tissue extracts exercise an action antagonistic to that of autolytic enzymes. However, in health the two tendencies are so regulated that the tissue disintegration is sufficient to permit the organs to perform their function, while excessive wear is avoided. But as soon as the normal nutrition of the organism is disturbed the autolytic power of tissues increases. The mere fasting of an animal suffices to occasion in the tissues an exaggerated tendency for self-destruction. This was demonstrated by the experiments of Lane-Claypon and Schryver.[31] It has been known for years that in cases of starvation animal organs lose in weight and that the loss varies in different organs. It is not improbable that products formed by disintegration of some organs serve to support the integrity of other more important organs. More marked is the high destructive power of tissues in diseases of a grave nature. Thus in diseases of the respiratory system and of the heart, an intense self-digesting tendency of the tissues was noted by Schlesinger. In infectious diseases a similar observation was made by Flexner.[32] The work of this author preceded that of Schlesinger,[33] and is very important for the reason that it furnished an interpretation for some old observations of pathologists.

Flexner demonstrated an unusually high rate of self-digestion in organs removed from individuals who succumbed to typhoid fever and other infectious diseases. The observation on typhoid is of special interest, since the exaggerated autolysis in the course of the disease can not be ascribed to the action of the micro-organism, for it is known that the proteolytic power of that germ is very slight. That this high rate of self-digestion is not merely a postmortem phenomenon may be concluded from the old clinical observation, that products of proteid digestion are eliminated by the kidneys in the course of infectious diseases. The occurrence of peptonuria in these pathologic forms is not infrequent. Thus, in the light of the new investigation, this symptom acquires a special significance. So long as the nutrition is in a sufficiently good condition to prevent wasting of the tissues of the body, pepton is not present in the urine.

However, the softening and the wasting of tissues is most striking when these are under the influence of protoplasmic poisons. For this reason the study of phosphorus poisoning has attracted great attention. Martin Jacobi[6] first pointed out the high rate of autolysis of the organs removed from animals killed by phosphorus poisoning.

In this condition self-digestion takes place not only in surviving organs, but also during life. This may be concluded from the work of Abderhalden[21] and his coworkers, who recently have demonstrated the presence of the crystalline components of the proteid molecule in the urine of animals poisoned with phosphorus.

The importance attached to the study of phosphorus poisoning is largely due to the resemblance which the clinical symptoms of this condition bear to that of a spontaneous pathologic form known as yellow atrophy of the liver. While the morphologic changes in the liver in the two conditions are not absolutely identical, still they present many points of similarity. The most striking are the disintegration of cellular elements and the so-called fatty degeneration of the organ. Through the work of many investigators, and particularly through that of Wakeman and Waldvogel, it has become evident that the changes which the liver undergoes in these pathologic conditions are identical with those which the organ suffers in the course of autolysis. Indeed, the fact that the liver of persons who have succumbed to yellow atrophy contains products of proteid digestion was demonstrated by Salkowski more than twenty years ago and was recently corroborated by Alonzo Taylor.[33] However, in neither of the two forms are the changes limited to one organ. Jacobi has demonstrated that the blood in phosphorus poisoning presents a striking loss of coagulability. Still more striking is the power it possesses of liquefying coagulated blood. This peculiarity was interpreted as being due to the presence of a proteolytic enzyme in the blood. In the course of yellow atrophy, products of a proteid cleavage have been

27. Zeitsch. f. Biol., vol. xliv, 1903.
28. Münch. med. Wochft., 1903.
29. Cent. f. Bacteriol., vol. xxvii, 1900.
30. Hofmeister's Beiträge, vol. iv, 1903.
31. Jour. of Physiol. vol. xxxi, 1904.
32. Univ. of Penn. Bull., July, 1903.
33. Jour. of Med. Research, vol. viii, 1902.

found in the blood by Frerichs. This has been corroborated by many investigators, and very recently Neuberg and Richter[34] have shown that leucin, tyrosin and lysin may be present in the blood in quantities which clearly show their origin could not be limited to the liver alone.

Thus, in the foregoing forms all tissues are apparently affected in the same manner. Marked autolysis in them may be considered a symptom of decline in general health and nutrition. However, there are conditions in which self-digestion is located in one organ only; thus the atrophy of the thymus, the involution of a puerperal uterus, are accomplished by a process of autolysis. The softening of tumors is brought about by the same mechanism. This was made clear through the work of Petry,[15] who demonstrated that freshly removed tumors contain products of proteid cleavage. The same author further demonstrated that the rate of self-digestion of the new growth is higher than that of a normal tissue. An attempt was also made to study the toxicity of the products resulting from this process. However, neither from a chemical nor from a pathologic point of view could a difference between the end-products of autolysis of tumors and those of normal tissues be detected. Indeed, the intensity of self-digestion is high in all organs composed of cellular elements endowed with rapid growth.

The occurrence of local autolysis is not, as a rule, productive of a lowering in general health. On the contrary, it tends to restore normal conditions when these have been disturbed.

There are other conditions in which the process of autolysis is of aid to the organism in the efforts to maintain its integrity. It has been stated already that in the course of infectious diseases tissues possess a high power of autolysis. Investigations of Blum,[14] Conradi[35] and Levaditi[36] have shown that autolysis may be one of the means to which the organism resorts in order to elaborate protective substances. Substances of two distinct groups are formed in the organism as the result of infection. Those of one group aim to destroy the micro-organism and are designated bactericidal; the purpose of the other is to neutralize the toxin elaborated by the micro-organism; these are commonly named antitoxin. Normal tissues in the course of autolysis may give rise to substances of either group.

Blum has shown that the products of autolysis of lymph glands possess the power to neutralize tetanus and diphtheria toxins and cobra venom. The mechanism of this action is not based merely on the physical properties of the autolyzed gland, for it is possible to save animals from death by injecting the products of autolysis subsequent to the injection of toxin.

Further, Conradi has tested the bactericidal power of the products of self-digestion of various organs. This author noted that the last, added to a suspension of bacteria in broth, prevented their growth. The intensity of bactericidal power varied in different organs, as presented in the following table:

Muscle	Strong
Lymphatic gland	Strong
Liver	Strong
Spleen	Strong
Thymus	Marked
Suprarenal	Marked
Bone marrow	Slight
Pancreas	None
Thyroid	None

Glancing over the table, one is struck by the fact that organs rich in leucocytes are most efficient in elaborating protective substances against infection. And one is naturally led to the analysis of the rôle played by the white blood cells in the effort of the animal body to maintain its integrity. A review of all the information gained concerning the action of leucocytes on the tissues shows that this is similar to the action of the digestive tissue enzymes. A tissue invaded by the white blood cells is subject to the action not only of the local enzymes, but of those of the blood cells as well. Digestion caused by the last, strictly speaking, can not be regarded as self-digestion. However, the two processes present so much similarity that they are classified by most writers under the same head of autolysis.

The formation of proteid-digestion products through the action of leucocytes was first noted by a Russian writer, Eichwald, in 1864. The observation has been corroborated by many scientists and clinicians. Pepton has been demonstrated in pus and in the urine in all conditions associated with abscess formation. But the work that has attracted most attention and stimulated most research is that of Friedrich Müller. This author has demonstrated that in croupous pneumonia the resolution of the exudate is accomplished by a process of autolysis. The products arising in the course of resolution are identical with those occurring in proteid digestion. The mechanism of this process has been interpreted by Flexner, who, studying the intensity of autolysis in different stages of croupous pneumonia, observed that the intensity was very high in the stage of gray hepatization and very low in the stage of red hepatization, and explains this by the abundance of leucocytes in the exudates in the first condition and their scarcity in the other. Flexner also noted that in unresolved pneumonia the autolytic power is very imperfect. In this condition, as is well known, the exudate is very poor in leucocytes.

Flexner is inclined to interpret the failure of absorption of the exudate in unresolved pneumonia as being due to the disproportion between the leucocytes and the other constituents. Indeed, the correctness of the assumption that the absorption of an exudate is accomplished by the action of leucocytes was established by the work of Opie,[37] who has noted that a fresh exudate does not possess the same degree of autolytic power as an old one. He has also noted that the lack of self-digestion in the first is due in some degree to the presence in the serum of a substance checking the digesting action of the blood cell. The rôle of the leucocyte in the absorption of inflammatory exudates has been previously described by Ascoli and Mareschi[38] and by Umber,[39] but the details of the mechanism were not fully understood until the appearance of the work of Opie. The discovery of the substance capable of keeping in check the destructive work of the blood cell is of great value for the understanding of the process. And it is now established that in the white cell the organism finds its most active factor for repairing the damaged and inflamed tissue.

There still remains to be discussed one point in the mechanism of leucocytic action. Regarding other tissue enzymes it has been stated that the destruction of the cell always precedes their liberation. Many writers have surmised that this applies also to the white blood cell. And yet this has not been fully established. The obser-

34. Deutsch. med. Wochft., No. 16, 1904.
35. Hofmeister's Beiträge, vol. i, 1902; vol. v, 1904.
36. Ann. de l'Inst., Pasteur, vol. xvii, p. 186.
37. Jour. of Exp. Medicine, vol. vii, 1905.
38. Maly's Jahresb., vol. xxxii, 1902.
39. Münch. med. Wochft., No. 49, 1902.

vation that in leukemia autolysis is noted during life seems to contradict the foregoing assumption. However, it is possible that the dead cell exercises at least a greater digestive action than the living. Hedin[24] and Opie have demonstrated that from the white cell two enzymes can be obtained. One resembles the enzyme elaborated by the pancreatic gland, the other the autolytic enzymes. It is conceivable that the first is secreted during the life of the cell, the last liberated only after its death. It is possible also that, once set free, the autolytic enzyme increases the power of the other enzyme. An analogous action of the spleen on the pancreas has been assumed by many writers and was proven by Stookey and myself. Thus waste and repair are controlled to a large extent by the same factors.

Autolysis, then, is the process by which dead tissue is not only prevented from becoming a burden to the organism, but, in addition, becomes converted into useful fuel material. By the aid of these processes diseased tissues, pathologic formations and new growths are removed and replaced by normal healthy tissues. The organism resorts to this process also for elaboration of protective substances against bacteria and bacterial toxins. It still remains to be demonstrated whether or not in the course of autolysis enzymes are formed which are concerned in producing that energy which makes all animal functions possible.

AN EXAMINATION OF THE STOOLS OF 100 HEALTHY INDIVIDUALS, WITH ESPECIAL REFERENCE TO THE PRESENCE OF ENTAMŒBÆ COLI.

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Numerous investigators have found amebas in the stools of healthy persons, but, since they have mostly made no distinction between *Entamœba coli* and *Entamœba dysenteriæ*, their results can not be considered in this connection.

Schaudinn,[1] however, examining the stools of healthy individuals, demonstrated the presence of the *Entamœba coli* in the stools of 50 per cent. of those examined in West Prussia, in 20 per cent. of those examined in Berlin, and in 66 per cent. of those dwelling on the shores of the Adriatic.

Craig[2] demonstrated the presence of *Entamœba coli* in the stools of healthy individuals in 65 per cent. of the cases and in 50 per cent. of the 150 cases examined of patients suffering from other than intestinal disease.

These results would seem conclusively to demonstrate the fact that the *Entamœba coli* is an extremely common intestinal parasite and the strong probability of its innocuous nature. But while Strong,[3] in an investigation carried out in the Philippine Islands, a place where we should naturally expect to find this organism at least as widely distributed as it is in the United States, found only 8 out of 200 individuals infected with *Amœba coli* (Strong), and Musgrave and Clegg[4] state that "all amebas are or may become pathogenic," further observations on the *Entamœba coli* are not out of order.

1. "Arbeiten aus dem Kaiserlichen Gesundheitsamte," 1903, xix, No. 3, p. 563.
2. "Observations on Amebas Infecting the Human Intestine," American Medicine, vol. ix, Nos. 21, 22 and 23, 1905.
3. "Circulars on Tropical Diseases," No. 1, February, 1901, p. 10, Manila.
4. "Bulletin No. 18," Bureau of Government Laboratories, Biologic Laboratory, Manila, P. I.

METHOD.

In order to determine if it was possible to find the *Entamœba coli* in an ordinary hard stool, a number of such specimens were examined by triturating small portions of the stool in normal salt solution with a platinum loop on the glass slide. In a number of cases this method was successful, and it is probable that the administration of salts only facilitates the finding of amebas by furnishing a ready-made liquid stool in which the amebas have become dissolved out of the hard fecal matter and become suspended in the fluid. As previous investigators have usually administered salts, however, the following method was adhered to in obtaining the 100 stools considered here: 60 c.c. saturated solution of magnesium sulphate were administered and the liquid stool examined as soon as passed.

The results obtained from this examination are classified in the following tables, but before proceeding to their consideration it should be stated that the natives examined were members of the Philippine constabulary and Philippine scouts, mostly the former, and that the white soldiers were taken partly from the Hospital Corps and partly from Companies A and D of the 20th U. S. Infantry. At the time of examination they were all stationed in the Cottabato Valley, Mindanao, P. I. The natives come from all parts of the islands, and, while a large proportion of them are Moros, they have served in other islands. The American soldiers come from 24 different states of the Union, and are, therefore, not drawn from any particular district. All of the men were in good health and on active duty at the time examined. Two of the Americans have a history of chronic dysentery several years ago. This may have been simply some form of enteritis associated with the *Entamœba coli*. Both men are in perfect health at the present time

The characteristics of the *Entamœba coli* observed in these specimens as distinguished from *Entamœba dysenteriæ* are as follows:

ENTAMŒBÆ DYSENTERIÆ.	ENTAMŒBA COLI.
SIZE.	
25-30 Microns.	(Not a distinguishing feature.) 10-20 Microns.
SHAPE.	
Usually some other shape.	Spherical when resting.
COLOR.	
Greenish.	Opaque grayish.
PROTOPLASM.	
Ectoplasm and entoplasm *easily distinguished.*	Ectoplasm and entoplasm *distinguished with difficulty.*
Ectoplasm very refractive.	*Ectoplasm not refractive.*
Ectoplasm finely granular.	Ectoplasm homogeneous.
Entoplasm coarsely granular.	Entoplasm finely granular.
PSEUDOPODIA.	
Large and easily distinguished. Contain ectoplasm and entoplasm.	Entirely ectoplasm. Hard to distinguish.
VACUOLES.	
Many vacuoles.	Vacuole absent usually. Never more than one.
NUCLEUS.	
Often absent. When present structure of nucleus hidden except in stained specimens. Nuclear membrane not well defined.	Almost invariable with well defined nuclear membrane and other structure.
Changes position markedly.	In moving organism retains its relative position.
RED CORPUSCLES INGESTED.	
Many.	None observed.
MOTILITY.	
Great progressive motility.	Often absent, and when present, of limited extent and short duraton.

These are a part of the differences observed by Craig[2] to exist between the two species. In this investigation no attempt was made to differentiate the two species by

stained specimens or by observation of the various methods of production, since the object desired was to demonstrate the presence of the *Entamœba coli* by a simple clinical examination such as is generally applied to suspected cases of amebic dysentery; at the same time reproduction of fission was observed in several cases, while reproduction by encystment was never seen.

It follows as a result of these observations that not only is *Entamœba coli* often present in the intestines of normal individuals in this region, but that it is by far the most common parasite, having been found in 50 per cent. of the American soldiers examined, while the next most common parasite, the *Cercomonas intestinalis* was only present in 24 per cent. of the cases. In the natives the *Entamœba coli* was present in 70 per cent. of the cases examined, while the next most common parasite, the *Ankylostomum duodenale*, was present in only 64 per cent.

NATIVE SOLDIERS.

Number.	History of Dysentery.	History of Diarrhea.	Entamœba Coli. 35 or 70 per cent.	Ankylostomum Duodenale. 32 or 64 per cent.	Trichocephalus Dispar. 27 or 54 per cent.	Cercomonas. 18 or 36 per cent.	Ascaris Lumbricoides. 10 or 20 per cent.	Anguillula. 5 or 10 per cent.	Tenia Solium. 1 or 2 per cent.
1	—	—	+	+	+	+	—	—	—
2	—	—	+	+	+	+	+	—	—
3	—	—	+	—	+	—	—	—	—
4	—	—	+	+	+	+	—	—	—
5	—	—	+	+	—	+	—	—	—
6	—	—	—	—	—	—	—	—	—
7	—	—	—	+	+	—	—	—	—
8	—	—	+	+	+	+	—	—	—
9	—	—	+	+	+	+	—	—	—
10	—	—	+	+	—	—	—	—	—
11	—	—	+	+	+	—	—	—	—
12	—	—	—	+	+	—	—	—	—
13	—	—	+	+	+	—	—	+	—
14	—	—	+	+	+	+	—	—	+
15	—	—	+	—	—	—	+	—	—
16	—	—	+	—	—	—	—	—	—
17	—	—	—	—	—	—	—	—	—
18	—	—	+	+	+	+	—	—	—
19	—	—	—	—	+	—	+	—	—
20	—	—	—	+	+	+	+	—	—
21	—	—	—	—	+	—	—	—	—
22	—	—	+	+	+	+	—	—	—
23	—	—	—	+	—	—	—	—	—
24	—	—	—	—	+	—	—	—	—
25	—	—	—	—	—	—	—	—	—
26	—	—	—	—	—	—	—	—	—
27	—	—	—	+	—	—	—	—	—
28	—	—	—	—	—	—	—	—	—
29	—	—	+	+	+	—	—	—	—
30	—	—	+	+	+	+	—	+	—
31	—	—	+	+	+	—	+	—	—
32	—	—	+	+	+	+	—	+	—
33	—	—	+	+	+	—	—	—	—
34	—	—	+	+	+	+	+	—	—
35	—	—	+	+	—	—	—	—	—
36	—	—	+	—	—	—	—	—	—
37	—	—	+	+	—	—	—	—	—
38	—	—	—	—	+	—	—	+	—
39	—	—	+	—	—	+	—	—	—
40	—	—	+	+	—	—	—	—	—
41	—	—	+	—	—	—	—	—	—
42	—	—	+	+	—	—	—	—	—
43	—	—	+	+	—	—	+	—	—
44	—	—	+	+	+	+	—	—	—
45	—	—	+	—	—	—	—	—	—
46	—	—	+	+	—	—	—	—	—
47	—	—	+	—	—	—	—	—	—
48	—	—	+	—	+	+	—	—	—
49	—	—	+	—	—	+	+	+	—
50	—	—	+	+	—	—	—	—	—

WHITE SOLDIERS.

Number.	Months in Philippines.	History of Dysentery.	History of Diarrhea.	Entamœba Coli.	Cercomonas.	Ankylostomum Duodenale.	Ascaris Lumbricoides.	Trichocephalus Dispar.	Anguillula.
1	8	—	—	+	+	—	—	—	—
2	7	+	—	+	—	—	—	—	—
3	9	—	—	—	—	—	—	—	—
4	8	—	—	—	—	—	—	—	—
5	7	—	—	—	—	—	—	—	—
6	8	—	—	+	+	—	—	—	—
7	7	—	—	—	—	—	—	—	—
8	39	—	+	—	—	—	—	—	—
9	21	—	—	—	—	—	—	—	—
10	6	—	—	+	—	—	—	—	—
11	20	—	—	—	—	—	—	—	—
12	18	—	—	—	—	—	—	—	—
13	8	—	—	—	+	—	—	—	—
14	18	—	—	—	—	—	—	—	—
15	14	—	—	+	—	—	—	—	—
16	14	—	—	—	—	—	—	—	—
17	9	—	—	—	—	—	—	—	—
18	18	—	—	+	—	—	—	—	—
19	24	+ acute	—	+	—	—	—	—	—
20	20	—	—	+	—	—	—	—	—
21	7	—	—	+	+	—	—	—	—
22	11	—	—	—	+	—	—	—	—
23	7	—	—	+	—	—	—	—	—
24	9	—	—	+	+	—	—	—	—
25	30	—	—	+	—	+	—	—	—
26	50	—	—	—	—	—	—	—	—
27	8	—	—	+	+	—	—	—	—
28	24	—	—	+	+	—	—	—	—
29	36	—	—	+	—	+	+	+	—
30	36	+	—	+	+	—	—	—	—
31	18	—	—	+	—	—	—	—	—
32	18	—	—	—	—	—	—	—	—
33	9	—	—	—	—	—	—	—	—
34	9	—	—	+	—	—	—	—	—
35	8	—	—	+	+	—	—	—	—
36	18	—	—	+	—	—	—	—	—
37	21	—	—	—	—	—	—	—	—
38	14	—	—	+	—	—	—	—	—
39	48	—	—	—	—	—	—	+	—
40	14	—	—	—	—	—	—	—	—
41	16	—	—	—	—	+	—	—	—
42	48	—	—	—	—	—	—	—	—
43	8	—	—	—	—	—	—	—	—
44	5	—	—	—	—	—	—	—	—
45	57	—	—	—	—	—	—	—	—
46	20	—	—	+	—	—	—	—	—
47	10	—	—	+	+	+	—	—	+
48	18	—	—	+	+	—	—	—	—
49	48	—	—	+	—	—	—	—	—
50	48	—	—	+	—	—	—	—	—
	Total	. . . .	. . .	25 or 50%	12 or 24%	4 or 8%	1 or 2%	2 or 4%	1 or 2%

RELATION OF THE ENTAMŒBA COLI TO AMEBIC DYSENTERY.

These results simply tend to strengthen the position previously taken by Schaudinn,[1] Craig[2] and others that the *Entamœba coli* does not produce dysentery. It is true that agents which we know produce pathologic conditions may be sometimes found in healthy individuals, the resistance of these individuals being explained by their immunity or relative insusceptibility, but we know of no parasite which is accredited with the power of producing a certain disease and which is also present in from 50 per cent. to 70 per cent. of normal individuals.

The presence of *Ankylostomum duodenale*, which we know is of pathologic significance, in 64 per cent. of the normal natives examined, may at the first seem to contradict this statement, but a further consideration shows this to be by no means the case. The ankylostoma were, indeed, nearly as widely distributed, but were very few in number in any given case (see below), and the malevolent influence of two or three of these minute worms would be negligible. It is only when present in great numbers that they cause a sufficient loss of blood to produce the anemia characteristic of ankylostomiasis.

But perhaps the *Entamœba coli* were also present in very small numbers? This is undoubtedly true in some of the cases, especially among the Americans, but in other cases they were present in myriads. Often it was very hard to find a field which did not contain two or three, and in native Case 49, I counted 39 *Entamœbæ coli* in a single field, and it would have been hard to find a field which did not contain from ten to twenty. This from a single droplet of the stool. And, besides the problem is entirely different in the two cases, for the *Entamœba coli* possesses the power of indefinite multiplication in the intestines, while the ankylostomum can only be increased in any individual by reinfection.

Nor can we say that perhaps this man would develop dysentery later, for, although but a single specimen stool was examined from the majority of these cases, all the men have been under observation for a period of nine months and none of them has developed dysentery.

Several of the men have been examined at intervals of several months to see if the *Entamœba coli* persisted in the stool for any length of time. In Case 15 of the Americans and in Cases 13, 31 and 49 of the natives amebas were always found at each examination. These cases were selected for continuous observation, for the reason that the parasite was present in abundance and easily found when search was made. In this connection it may be remarked that Craig,[5] in refuting the view of Musgrave and Clegg that individuals presenting *Entamœba coli* in health have never been observed for a long enough time to be positive as to whether or not dysentery might result, states that he has observed such individuals for a period of six months and has found these parasites constantly present.

CONCLUSION.

The *Entamœba coli* can not be considered as the cause of chronic dysentery, since it is found as a continuous infection in about 50 per cent. of all normal individuals in many localities. It follows that no diagnosis of amebic dysentery should be made by the microscopist unless he has found the *Entamœba dysenteriæ* as distinguished from the *Entamœba coli.*

The *Ankylostomum duodenale* is the most important of the intestinal worms found. This parasite seems to be very widely distributed among the natives in this locality, although I have not seen a single case of typical ankylostomiasis during a period of observation lasting ten months. This is apparently because the parasites were not present in large numbers in any individual. In the majority of the natives examined two or three ankylostoma eggs could be found in a single slide after a careful examination, but they are present in much larger numbers when the parasites are abundant enough to produce anemia.

Generally the development of the embryo in the intestine does not progress beyond segmentation of the egg, but it is worth recording that in one specimen, that of Native 14, examined immediately after its passage, numerous free swimming ciliated rhabditiform embryos were seen. This stage is not usually attained until one or two days after leaving the intestine. Ova in various stages of development, including advanced periods of segmentation, and eggs containing moving embryos on the point of hatching were also found.

A point of interest in diagnosis may here be made. No case should be diagnosed as ankylostomiasis and so treated merely because a few of the eggs of this parasite are found. To do this seems to be a tendency of most practitioners who come from a region where the ankylostomum is unknown to a locality where it is frequent. It is safe to say that no case should be diagnosed as ankylostomiasis unless presenting the characteristic symptoms of this condition, combined with a large number of eggs in the stool. In this connection I would like to quote Manson,[6] who says: "It is not in every instance in which the ankylostomum is present that consequences so serious ensue. There may be dozens of ankylostoma in the intestine without any appreciable anemia, or, indeed, symptoms of any description whatever. Grave symptoms are the exception. One must be careful, therefore, to avoid concluding that the ankylostomum is the cause of every pathologic condition with which it may chance to concur."

The other intestinal parasites may be dismissed briefly as of little or no pathologic significance. The one case of tapeworm occurred in native No. 14, who was a Filipino and not a Mohammedan, and therefore was not prevented by his religion from indulging in pork. He was entirely unaware of its presence, and had not missed a day from duty as the result of five parasites that he harbored.

This wide dissemination of intestinal parasites among the natives is, no doubt, facilitated by the universal custom of the Moros, who are Mohammedans, of defecating in the river, and the fact that, excepting the few Americans living here, it is also a universal custom to drink this river water unboiled. The number of natives infected with one or another of the parasites considered above as compared with the number of Americans infected probably furnishes some index of their relative liability to other water-born intestinal affections. Thus out of fifty natives examined there were only two in whom no parasite of any kind was found, while out of the same number of Americans twenty-one had no intestinal parasites, making the relative liability ten times as great among natives as among Americans. Or, considering the ratio of the total number of infections in the natives to the total number in the Americans, we have 428 to 45—nearly three to one. We may say, therefore, that the native soldier is between three and ten times more liable to water-born intestinal diseases than the American soldier. The native soldier in this locality uses plain river water, while the American is furnished distilled and boiled water, with occasional relapses to the unboiled water during "hikes" and in Chinese restaurants.

While, to be sure, there are other methods of disseminating intestinal diseases besides the drinking water, surely the advantages of boiled or distilled water are thus made sufficiently plain.

5. American Medicine, vol. ix, No. 23, June 10, 1905, p. 939.
6. "Tropical Diseases," "Ankylostomiasis."

A CASE OF RIGHT SUBCLAVIAN ANEURISM—ATTEMPTED ENDOANEURISMORRHAPHY (MATAS).

CURE FOLLOWING SIMULTANEOUS LIGATION OF COMMON CAROTID AND FIRST PORTION OF SUBCLAVIAN.*

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A study of the classical paper by Matas[1] describing his operation for the cure of aneurism impressed me profoundly. The operation aims at the obliteration of the sac with comparatively little disturbance of the circulation of the part. After securing preliminary hemostasis by means of the elastic bandage, the aneurism is opened in the general course of the affected vessel and all of its internal orifices are closed by suture. The sac itself is then obliterated by rows or layers of sutures. In the case of sacculated aneurisms this procedure may be carried out without interfering with the lumen of the vessel itself. In fusiform aneurisms, however, it may be necessary to obliterate the affected vessel together with the sac, although in some cases the vascular lumen may be

* Read before the Section on Surgery of the New York Academy of Medicine.

1. Matas: Annals of Surg., February, 1903.

re-established by suturing around a rubber tube, the ends of which have been placed in the two main openings of the sac (afferent and efferent). The tube is to be removed before the final sutures have been tied. His discussion concerning the possibilities of the method in dealing with aneurisms of the larger visceral arterial trunks not situated favorably for the employment of the elastic constrictor was very suggestive, and I determined to give the method a trial should the opportunity ever present itself.

The present paper contains the report of a case in which Matas' operation was attempted and, although it records a failure, the lack of success should not be ascribed to the method, but rather to the fact that the steps were not fully carried out. The apparently complete recovery of my patient after the employment of the older operation of proximal ligation is gratifying, but it will not deter me from making another attempt to follow out the principles of Matas if the occasion should arise.

History.—The patient was a Russian, 40 years old, and a tailor by occupation. He had served as a soldier in the infantry of his country. For the past ten years he had suffered not infrequently from what he called rheumatism. He stated emphatically that he had never been infected with gonorrhea or syphilis, and careful physical examination strengthened my belief in his truthfulness. For about a year there had been a stabbing pain in the precordial region, which had been pretty persistent but not progressive. In December, 1904, the precordial pain began to radiate to the right shoulder and down the right arm. Soon after this a localized swelling was noted in the right supraclavicular region and there was a general enlargement of the right arm and hand, especially noticeable in the fingers. The patient also complained of a prickling sensation in the right hand. He entered one of my wards at Mount Sinai Hospital, Feb. 4, 1905.

Examination.—The man's general physical condition and nutrition were good. The superficial veins over the right supraclavicular and infraclavicular regions were markedly dilated, running over the top of the shoulder. Dullness and rather high-pitched respiration were noted in the right infraclavicular region. Above the middle of the right clavicle there was a hemispherical, strongly-pulsating tumor, a little smaller than half a lawn-tennis ball. The pulsation was distinctly expansile in character and was accompanied by a marked systolic thrill. With the stethoscope a short systolic and a short diastolic murmur could be heard. The overlying skin was not discolored, nor was it adherent to the mass. The clavicle, too, seemed to be uninvolved. The right shoulder and the entire arm and hand were slightly cyanotic and were covered with numerous minute bluish vessels. The right arm and hand were swollen so that they were considerably larger than the left, but there was little, if any, pitting on pressure. The fingers of the right hand were markedly clubbed (Fig. 1). Pulsation at the right radial was somewhat delayed and was much weaker than at the left. There was no evidence of arteriosclerosis. The temporals were visible but were not abnormally tortuous.

Operation.—Four days after admission, February 8, the patient was anesthetized with chloroform and an incision was made from the outer fourth of the clavicle to the sternoclavicular articulation and thence for four inches along the anterior border of the sternocleidomastoid muscle. The skin flap was dissected off, the insertion of the sternocleidomastoid was divided and the inner half of the clavicle was subperiosteally resected. A temporary ligature of chromicized catgut was thrown around the common cartoid artery, but not tightened, and the vessel was then followed down to its origin from the innominate. By working carefully and keeping close to the vessel, no important nerve or vein was injured. Exposure of the innominate was excellent and ligation of this vessel would have been easy. A temporary ligature of chromicized gut was now thrown around the first portion of the subclavian about one-half inch from its origin, and was held by a clamp at a sufficient tension to obliterate pulsation in the aneurism. Pressure over the aneurism caused easy and complete emptying, but on release of pressure there was a gradual refilling of the sac. From the rate of this reflux, which was still further diminished by tightening the carotid ligature, I believed that it might be possible to open the sac and secure the mouths of the tributary and branching vessels, so as to treat the case by Matas' method. I accordingly pierced the most prominent part of the tumor with the point of the scalpel and cut toward the shoulder for about three-quarters of an inch. To my disappointment there was a steady, non-pulsating fountain of blood, which spurted vertically for about four inches. The insertion of my finger for purposes of exploration at once checked the hemorrhage. The only opening in the sac which I could detect was a large one, which occupied a position toward the shoulder of the patient and admitted the tip of the finger. There were no coagula. The lining wall of the aneurism was everywhere smooth. There was no indication of a tributary opening toward its cardiac side. Evidence

Fig. 1.—Photograph taken four weeks after operation. Note difference in size of the two hands, the line of the cicatrix and the asymmetry due to the transplantation of the right sternocleidomastoid muscle. (This photograph was kindly made for me by Dr. *Branower of the House Staff of Mt. Sinai Hospital.)

of irregularity indicating atheromatous degeneration or calcification was wanting. The anatomy of the aneurism, thus shown to be of the sacculated variety, may be understood from the accompanying diagram (Fig. 2).

The patient's condition, which had been excellent, now gave some indication of shock, and I determined to risk nothing further, but at once sutured the vascular wound with catgut and a hemostatic needle. The first portion of the subclavian was then ligated with double No. 3 chromicized gut after the method of Ballance and Edmunds. The carotid was also permanently ligated. The divided sternomastoid muscle was attached to the remainder of the clavicle and the wound sutured with drainage. The usual dry gauze aseptic dressing was applied and the hand and arm were enveloped in cotton and bandages.

Pain following the operation was slight, but for several days there was considerable reaction of absorption and some tender-

ness over the aneurismal tumor. The temperature rose as high as 102 F., but gradually subsided and the patient's condition never gave reason for alarm. He was kept in bed for twenty-two days and then was allowed to be about in a wheeling chair. The circulation in the right upper extremity was never poor, but there was naturally some local cyanosis and the radial pulse remained absent up to the time of his discharge, March 22, 1905, when the patient was presented before the New York Surgical Society. The cyanosis had by that time almost disappeared. Pulsation in the temporal artery returned faintly thirty-eight days after the operation.

Postoperative History.—The patient was seen about three months after the operation and the cure of the aneurism seemed to be complete. The tumor had disappeared, except a small, hard mass, and there was no pulsation in the subclavian region nor in the radial. The right hand had remained larger than the left, but was apparently progressing toward the normal. On testing the circulation by pressing and releasing the fingernails it was noted that the subungual blush returned almost, if not quite, as promptly as in the left hand. There was still slight disability of the shoulder from the resection of the clavicle, but the bone had in great part reformed.

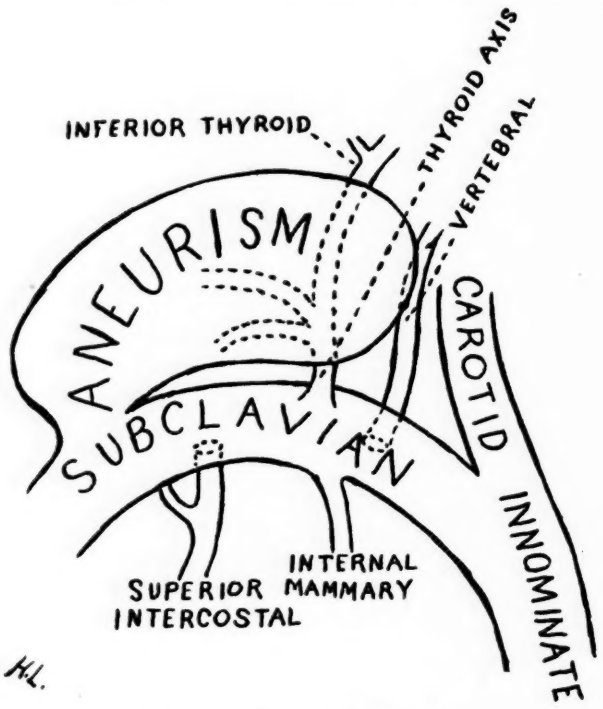


Fig. 2.—Diagram of the aneurism.

In reviewing this case a few of the more interesting points may be discussed. First, the cause of the trouble. In the total absence of anything pointing to general arterial disease we may perhaps conclude that the most probable causal factor may have been an injury to the healthy vessel by a direct blow, possibly with one of the angles of the rifle stock during military exercise. The aneurism, however, had not the anatomic characteristics of the traumatic variety.

Secondly, we may discuss the modern methods of treating these large aneurisms when they do not occur in an extremity. To be sure, the result here was so excellent that one might be forgiven for following the precedent another time, and yet to leave a large blood clot in a vessel to be taken care of by Nature is not the best surgical practice. Not only is there apt to be serious reaction during absorption, but there is a distinct liability to infection of the clot. The method of Antyllus, which consists in proximal and distal ligation with incision of the aneurism and turning out clots and with final packing of the cavity is one which has always been considered extremely dangerous. Proximal and distal ligation without opening the aneurism has been practiced and at times with success,[2] while extirpation (method of Purmann) has been well thought of by many surgeons. These procedures, however, cut off important blood supply and we must not forget the consequent danger of gangrene of the extremity.

If it were possible to deal with these cases after the method of Matas, which would cure the disease by obliterating the aneurism without interfering with the lumen of the vessel, there would be a distinct gain. Thus far, to my knowledge, this operation has been done only when the elastic tourniquet could be employed. My failure was due to the fact that a sufficient number of tributary vessels had not been cut off. Ligation of the thyroid axis, the internal mammary and even the vertebral would not have been difficult nor directly dangerous. A temporary ligature of the axillary would also probably have been required to keep the sac empty enough to permit suture of its orifice (Fig. 2). Matas, however, calls attention to the danger of dissecting out the aneurismal sac, since its walls are nourished, not by the contained blood, but by small vessels in the surrounding structures, and necrosis of the sac is apt to follow its clean dissection. Bearing this warning in mind, I did not wish to prejudice the vitality of the sac by a dissection sufficiently free to ligate all the vessels mentioned. Having explored the interior of the aneurism, I was aware that, in addition to what had already been done, possibly a temporary ligature around the axillary alone would control the current, but by this time a considerable quantity of blood had been lost and I felt the need of some haste. Were I called to operate in a similar case, I would certainly control the axillary before incising the aneurism.

I believe that the Matas method would have proved perfectly feasible in this instance, because I am sure that neither the thyroid axis, the internal mammary nor the vertebral was connected with the sac (Fig. 2) and that, therefore, a free dissection of the aneurism with the consequent danger of necrosis would not have been necessary. The collateral circulation into the axillary must have supplied the blood which filled the aneurism after the subclavian and carotid had been tied.

Whether or not the incision and digital (rubber glove) exploration of the interior of the sac with its subsequent suture had anything to do with the prompt clotting and the speed of cure is an interesting question.

The entire subject of aneurism of the vessels higher than the axillary is too large to be treated here. The literature of aneurism of the subclavian is rather voluminous. Dr. Eben Alexander, Jr., of the house staff of Mt. Sinai Hospital, kindly secured for me notes on eighty-nine cases, most of which were operated on before 1890. Many of these aneurisms were of the traumatic variety and the operative procedures were various. The mortality rate in the entire number from all causes was 52.8 per cent. It is, in reality, probably much higher, since failures are unfortunately less likely to be reported than successes. It seems, however, from the figures of Jacobsthal,[3] in an article on the operative treatment of subclavian aneurisms, that there has been a distinct lowering of the mortality rate since 1890, probably due to improvement in technic. Thus, before 1890, 55 out of 75 cases succumbed, showing a mortality of 73 per

2. Dr. J. A. Blake presented a beautiful case of aneurism of the subclavian treated by this method. See report of meeting of New York Surgical Society, Nov. 22, 1905.

3. H. Jacobsthal: Deut. Zeit. f. Chir., vol. lxviii, p. 239.

cent., while since 1890 only 4 out of 25 cases were fatal, or 16 per cent. This author believes in extirpation as the proper operative procedure and reports 20.8 per cent. cures: 5 in 24.

Confining this discussion to those operations in which there has been simultaneous ligature of the subclavian or innominate and the common carotid arteries proximal to the aneurism, I have been able to find the reports of 13 or, including my own, 14 cases, with 7 deaths, or 50 per cent. mortality. Sheen[4] has reported 12 of these cases, by various operators, including one of his own, in which there was simultaneous proximal ligation of the innominate and carotid. The thirteenth is an old case by Liston.[5] One of Sheen's fatal cases, however, was a secondary operation, ligature having been performed for hemorrhage following extirpation of a subclavian aneurism—operator, B. G. A. Moynihan. Omitting this, we have a mortality in 13 cases of 46.1 per cent. The interesting cases collected by Wyeth[6] illustrating the results of distal ligation for aneurisms near the heart do not concern us here.

The following are my conclusions and suggestions of technic for performing the Matas operation in sacculated aneurism of the subclavian artery:

From an examination of the literature one may readily see that the greatest danger following the ligation of the large arterial trunks is that of hemorrhage, either because of erosion of the vascular walls by the ligature, or on account of infection and ulceration into the lumen of the ligated vessel. Speaking on theoretical grounds, hemorrhage is all but impossible after endoaneurismorrhaphy (Matas). By performing this operation instead of ligation or even extirpation we shall probably greatly improve the statistics. It is simple, and, although best suited to the sacculated forms, may be perfectly feasible in certain cases of the fusiform variety. In a sacculated aneurism of the right subclavian, such as the one here reported, the technic suggested is the following: The incision should be along the anterior border of the sternocleidomastoid muscle from a point about at the level of the cricoid cartilage to the interclavicular notch, thence along the clavicle to its outer fourth. The sternocleidomastoid may then be divided at its insertion and the common carotid artery exposed and followed to its origin in order to find the subclavian. One should remember that anomalies are sometimes found here. Temporary ligatures should now be placed on the carotid and subclavian and the aneurism carefully observed, both as to pulsation and as to the refilling of the sac after it has been emptied by manipulation. If pulsation persists, or if there is a rapid refilling, a temporary ligation of the axillary is necessary. There should be no free dissection of the sac and no exposure of the smaller subclavian branches, such as the vertebral, thyroid axis, internal mammary or superior intercostal. The aneurism may now be opened by an incision small enough to be plugged by the exploring finger and the interior of the sac carefully examined to ascertain the number of large openings.

The character of the hemorrhage must be noted. It will probably not be severe and may be found to proceed from a single orifice of moderate size. There will probably not be pulsation. Endoaneurismorrhaphy may now be performed as described by Matas,[1] and on its completion the ligatures may be removed, first that of the carotid, second the axillary, and third the subclavian. If everything is in order the wound may be closed without drainage.

In dealing with aneurism of the left subclavian the steps must be changed somewhat to suit the anatomy.

NOTE.—Soon after this paper was sent to THE JOURNAL for publication, at a meeting of the Southern Surgical and Gynecological Association, reported in THE JOURNAL A. M. A., Jan. 6, 1906, page 66, Dr. F. W. Parham, New Orleans, stated that he had cured a case of left subclavian aneurism by suture of one orifice within the sac after the failure of proximal ligation.

4. Wm. Sheen: Annals of Surg., July, 1905, p. 1; also November, 1905, p. 802.

5. Quoted by Wyeth in "Essays in Surgical Anatomy and Surgery," Wm. Wood, 1879.

6. Wyeth, J. A.: "Text-Book on Surgery," Appleton, 1888.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XIII.

ASTRINGENTS—*Continued.*

METALLIC ASTRINGENTS.

The insoluble salts of bismuth are admirably adapted for the protection of the intestinal mucosa from irritations of various kinds. While as much as thirty times the average single dose of bismuth salts has been given in the course of a day, by mouth, without any distinct evidence of untoward results, absorption and poisoning have followed the external use of bismuth salts as a dusting powder when used over a large surface.

Owing to the extremely poisonous nature of bismuth when absorbed, the soluble salts seem to us to be entirely superfluous, particularly as their solubility precludes the very object for which bismuth compounds are chiefly used—that is, for the mechanical coating of the surface with a protective layer of insoluble powder. It must be admitted, of course, that even the soluble salts of bismuth are astringent, but we have many safer astringents which are harmless that might well be used in their stead.

The activity of the nostrum-makers has resulted in placing on the market a number of preparations that are intended to combine the antiseptic properties of the benzene derivatives with the astringent properties of bismuth, but until we know more of the possibilities and the limitations of internal antiseptics it is preferable to use the simple astringents and to use our antiseptics separately.

Bismuth subnitrate, or subcarbonate, when triturated with water, should form a creamy mixture, and the physician should not permit the use of that which readily separates as a heavy powder, leaving a nearly clear stratum of liquid above it. The covering power of bismuth is in direct proportion to the creaminess of the mixture.[1]

BISMUTHI SUBNITRAS.—U. S.—An insoluble white powder, without odor or taste.

BISMUTHI SUBCARBONAS.—U. S.—Closely resembles the subnitrate.

Average dose (of either salt): 0.5 gm. (8 grains).

BISMUTHI SUBSALICYLAS.—U. S.—This preparation closely resembles the subnitrate in physical properties and is intended to combine the antiseptic properties of the salicylic acid with the astringency of bismuth salts.

1. A typical prescription for gastric irritation, or ulcer is as follows:

℞. Bismuthi subnitratis	grs. cl	10
Mucilaginis acaciæ	3xv	50
Aquæ cinnamomi q. s.	ʒiii	100

M. Sig.: Shake well and take one or two teaspoonfuls three or four times a day.

In cases in which marked irritability persists, the addition of 0.01 gm. (1/6 grain) of cocain hydrochlorid to each dose, as a local anesthetic, may be advantageous, but we do not advise it as a routine procedure. For diarrhea one or two drops of the deodorized tincture of opium may be included for each dose, or, if preferred, 1 c.c. (15 minims) of paregoric, the official camphorated tincture of opium. For this purpose, it is usually preferable to give one dose every hour for three or four doses then every two to four hours as needed. Bismuth subcarbonate may be used instead of the subnitrate and tincture of kino, tincture of krameria or the compound tincture of gambir (catechu) may be added in the treatment of diarrhea.

Average dose: 0.25 gm. (4 grains).

BISMUTHI SUBGALLAS.—U. S.—This substance was at one time widely advertised and is even now occasionally prescribed by its proprietary name, dermatol. It occurs as a bright yellow, insoluble, odorless and tasteless powder, which is mostly used externally as a substitute for iodoform.

Average dose: 0.25 gm. (4 grains).

Official Lead Salts.

Lead is of interest chiefly because of the chronic lead poisoning so often encountered.

The principal internal use of lead is in the form of the pill of the acetate, usually combined with opium, in the treatment of diarrhea. It has also been recommended for dysentery, but it is not nearly so useful in that disease. This preparation should not be given for any considerable length of time, lest it give rise to chronic lead poisoning. The solution of lead subacetate is unfit for internal administration, but is of value in painful swellings and local inflammations and burns. The well-known mixture of laudanum and lead water has long been popular as an external application, but any mucilaginous liquid could probably be used in place of the tincture of opium without detriment, since the astringency of the lead is the main factor, the local application of the opium alkaloids being entirely superfluous because they are not absorbed from the unbroken skin. The local use of lead water itself is so thoroughly well established that it scarcely requires further comment.[2]

PLUMBI AECTATIS.—U. S.—Acetate of lead, or sugar of lead, is said to have been known to Geber. It was described by Raymund Lully in the thirteenth century, but was not used in medicine until introduced by Goulard a little more than a century ago. It occurs in crystals or as a heavy white powder, having an acetous odor and a sweetish, astringent, afterward metallic taste.

Average dose: 0.05 gm. (1 grain).

LIQUOR PLUMBI SUBACETATIS.—U. S.—An aqueous solution containing not less than 25 per cent of lead subacetate.

LIQUOR PLUMBI SUBACETATIS DILUTUS.—U. S.—This contains about 1 per cent. of lead subacetate and is made by mixing 4 parts of the solution of lead subacetate with 96 parts of distilled water.

The Local Treatment of Mucous Membranes.

The local treatment of inflammation of the mucous membranes in the mouth, nose, throat, vagina and urethra, after thorough cleansing, preferably with a solution of hydrogen dioxid, may require mild astringents of either organic or inorganic substances, though, as previously stated, the use of the solution of hydrogen dioxid has greatly lessened this necessity. Alum has long enjoyed a particular reputation in the treatment of stomatitis, and has also been used as a gargle, but it is injurious to the teeth, and the necessary solution, made of 1 part of alum in 20 parts of water, is preferably applied directly to the affected parts by means of a camel's-hair pencil or a swab made of absorbent cotton. After gargling, the mouth should be rinsed with water. Alum is not given internally so often as it was formerly, it is irritating and possesses no advantages over other astringents. Because of this irritant action it is emetic, and, while not very dependable, may serve in an emergency if no surer emetic is at hand. Small ulcerations of the throat, after having been cleansed with an antiseptic solution, may be touched with a mixture of 1 part of ferric subsulphate and 2 parts of glycerin with a camel's-hair pencil.

A very large number of astringent gargles are in common use, but the following is a good representative of the class:

℞. Tincturæ ferri chloridi.....m. cl 10
Potassii chloratis 3iii 12
Aquæ q. s.....℥vi 200

Those who object to the use of ferric chlorid may find the following preferable:

℞. Glyceriti acidi tannici.....3v 20
Aquæ q. s.....℥vi 200

ALUMEN.—U. S.—Alum should contain not less than 99.5 per cent. of pure aluminum and potassium sulphate. It occurs as colorless crystals or as a white powder; it is odorless, but has a sweetish and strongly astringent taste. Alum is soluble in 9 parts of water, but is insoluble in alcohol.

Average dose: 0.5 gm. (8 grains).

ALUMEN EXSICCATUM.—U. S.—Popularly known as dried alum, must contain not less than 99 per cent. of anhydrous aluminum and potassium sulphate. It is used for the same purposes as alum, and in addition is somewhat caustic when dusted, as a dry powder, on exuberant growths.

The Use of Zinc Salts.

Zinc sulphate and zinc phenolsulphonate may be considered together; they have a variety of applications, and it is only necessary to suggest the strength of the solutions that are to be used for various purposes.

For the eye they are generally used in the strength of from one-fourth to one-half of 1 per cent. in a solution of boric acid, to which camphor water may be added.

For the urethra strong solutions should not be used, one-half of 1 per cent. in water being sufficient. The popular combination of zinc sulphate and lead acetate, resulting in the insoluble lead sulphate and the very astringent zinc acetate, may possess some advantages over the more simple solution, but they are not very apparent.

Vaginal douches may be somewhat stronger and are frequently prescribed of from 1 to 2 per cent. strength.

As noted before, all the astringents may act as emetics if they are sufficiently irritant to the mucous membrane of the stomach and are not caustic. Zinc sulphate, however, deserves the preference among the astringents used as emetics. For this purpose it is usually given in doses of 1 or 2 gm. (15 to 30 grains) dissolved in a teacup of warm water.

The official salts of zinc that are of interest as astringents are:

ZINCI SULPHAS.—U. S.—Colorless crystals, without odor, having an astringent metallic taste. Zinc sulphate is soluble in less than 1 part of water, but is insoluble in alcohol.

Average dose: Emetic, 1 gm. (15 grains).

ZINCI PHENOLSULPHONATE.—U. S.—The zinc sulphocarbolate of previous editions of the Pharmacopeia has been referred to under antiseptics.

Average dose: 0.12 gm. (2 grains).

ZINCI ACETAS.—U. S.—This constitutes a widely used and deservedly popular astringent.

Average dose: 0.12 gm. (2 grains).

ZINCI OXIDUM.—U. S.—A white or yellowish-white powder, insoluble in either water or alcohol, it is largely used as a local application in dusting powders and in ointments, but is seldom given internally.

Average dose: 0.25 gm. 4 grains).

Copper and Iron Salts.

CUPRI SULPHAS.—U. S.—Blue stone or blue vitriol was known to the Greeks as Chalkanthos. Discorides described it as being a valuable astringent and, in large doses, emetic. It occurs as deep blue crystals that are devoid of odor, but have a nauseous, metallic taste. It is soluble in about 3 parts of water.

Average dose as an astringent: 0.01 gm. (10 mg. or 1/5 grain); as an emetic, 0.25 gm. (4 grains).

Of the numerous preparations of iron that have astringent properties we will mention but one, the chlorid, as representative of the whole class. This is official in several forms:

FERRI CHLORIDUM.—U. S.—This occurs in orange-yellow crystalline pieces, nearly odorless, but having a strongly styptic taste.

Average dose: 0.05 gm. (1 grain).

2. The following mixture will probably answer the purposes for which laudanum and lead water are commonly used:

℞. Liq. plumbi subacet .....gr. lxxv 5
Mucil. acac. .....gr. xlv 3
Aqua, q. s. ad.....℥iii 100

The solution of lead subacetate is diluted with 55 c.c. (16 drams) of water and the mucilage with 27 c.c. (8 drams) the two are then mixed. Fifteen c.c. (4 drams) of alcohol may be added to the water, but the amount of alcohol present in the mixture of laudanum and lead water is too small to be of any benefit.

LIQUOR FERRI CHLORIDI.—U. S.—An aqueous solution of ferric chlorid, containing about 29 per cent of the anhydrous salt.

Average dose: 0.1 c.c. (1½ minims).

This preparation is but little used, except for preparing

TINCTURA FERRI CHLORIDI.—U. S.—This is made by adding 35 parts of solution of ferric chlorid to enough alcohol to make 100 c.c. The official tincture is directed to be prepared at least three months before being used.

Average dose: 0.5 c.c. (8 minims).

This preparation is injurious to the teeth; therefore it should be directed to be taken through a tube and the mouth rinsed with water or a very mild solution of an alkali, like limewater.

Use of Silver Nitrate.

Silver nitrate in the form of the sticks, lunar caustic, is mainly used as a caustic for touching warts of various kinds and for non-granulating wounds. A solution of silver nitrate is sometimes used as an application to the conjunctiva, followed at once by a solution of sodium chlorid, whereby a momentary action of the silver nitrate is obtained, the nitrate being instantly converted into the chlorid when the solution of sodium chlorid is applied.

Silver in combination with different proteids has been introduced under a variety of trade-marked or proprietary names and recommended as a non-irritant antiseptic, mainly for the treatment of gonorrhea. Credé some years ago introduced a soluble form of metallic silver, for which certain manufacturers make the fabulous claim that it is an efficient disinfectant of blood and tissue. So long as septic diseases resist all treatment, it seems strange that reputable manufacturers will make such obvious misstatements.

The only official preparation of silver that is of direct interest in connection with astringents is

ARGENTI NITRAS.—U. S.—This salt is supposed to have been known to Geber, but was introduced into medicine by Angelus Sala during the seventeenth century. It is very soluble in water and occurs as colorless, transparent, tabular crystals, that darken on exposure to light in the presence of organic matter. It is odorless, but has a bitter, caustic and strongly metallic taste.

Average dose: 0.01 gm. (10 mg., 1/5 grain).

The internal use of silver nitrate as an astringent is necessarily empirical, as the actual composition that is formed when silver nitrate is brought in contact with organic matter must be complex and problematic. A favorite pill of the late Dr. William Pepper for chronic gastritis was the following. It is given without comment:

R. Argenti nitratis Extracti hyoscyami Mannæ, āā .....gr. 1/3	|02

To make one pill.

This was directed to be given three or four times a day, and the composition was occasionally varied by substituting powdered opium for the extract of hyoscyamus.

Vasoconstrictors.

In addition to the astringent drugs depending on tannin or the metallic salts, certain alkaloids possess a markedly astringent, or, more properly, vasoconstrictor effect when applied to mucous membranes. Of these, the most useful are hydrastinin, a derivative of hydrastin, from which it is obtained by oxidation, and the alkaloid of the suprarenal gland. Here we are compelled to admit that this latter alkaloid, which is now being marketed at the modest price of some $800 per ounce, despite Abel's simple and inexpensive method of preparation, is superior to the official desiccated suprarenal gland. The application of a 1 to 1,000 solution of hydrastinin or a 1 to 5,000 solution of the suprarenal alkaloid, in 0.9 per cent. solution of sodium chlorid, to an inflamed conjunctiva or inflamed nasal mucous membrane often affords prompt relief. In view of the very great difference in cost without a corresponding difference in effect, the physician can well afford to use hydrastinin in preference to the more expensive alkaloid in such conditions.

The desiccated suprarenal gland may be macerated in water and the fluid filtered and used, but any of the preparations of the alkaloid which appear under a variety of trade names will usually be preferred. Slight hemorrhages are also stopped by either of these means.

When the flow of blood is copious and hot water is ineffective, styptics are useful; they are not alone astringent, but also cause a sudden coagulation of the blood, and this plugs up the orifice. Large clots must be removed, as they prevent the immediate contact of the astringent or styptic and may conceal a hemorrhage occurring in cavities—the uterus, for instance—in which case the clot may fill the upper part of the vagina.

It is necessary to bear in mind the difference between the action of vasoconstrictors, like the alkaloid of the suprarenal gland, and the action of styptics, like tannin or the ferric salts. With the former the action is transitory and the hemorrhage may recur as soon as the action of the drug has worn away, while styptics, when effective, form a plug in the normally extended blood vessel.

GLANDULÆ SUPRARENALES SICCÆ.—U. S.—Desiccated suprarenal glands are directed to be obtained from the sheep or ox, freed from fat, cleaned, dried and powdered. One part of desiccated suprarenal gland represents approximately 6 parts of fresh glands free from fat.

Average dose: 0.25 gm. (4 grains).

The alkaloid contained in the suprarenal glands has been variously designated as epinephrin by Abel, suprarenin by Fürth and adrenalin by Takamine. The trade names that are now applied to the solutions of the same substance are legion, and it seems very unfortunate indeed that the committee on revision of the Pharmacopeia did not recognize the alkaloidal substance in an official way and give it an official title. The only effect to be expected from the internal administration of the gland or its alkaloid is the local constriction that is noticed when it is applied to the mucous membrane. The solution of the alkaloid is useful only for intramuscular or intravenous injection. When injected just beneath the skin it produces practically no effect, except a local vasoconstriction.

(To be continued.)

Clinical Notes

A CASE OF PRIMARY ARTERIAL THROMBOSIS OF THE EXTERNAL ILIAC ARTERY, WITH SECONDARY EMBOLUS.*

M. THORNER, M.D.
INDIANAPOLIS.

Primary or autochthonous arterial thrombosis of the large vessels, other than the aorta with sequelæ, affords a sufficient incentive to a most careful analysis of each case from a clinic as well as from a histologic standpoint, as the gravity of the subsequent conditions is of paramount importance.

The occurrence of secondary emboli from thrombosis in arteries other than the aorta and pulmonary arteries gives the following case an especial significance. To Virchow is given the credit of first actually proving anatomically and clinically, as well as of having first recognized that not all intravascular and antemortem clots are formed at the place where they are found, but are the result of emboli. It is a well-known fact that embolus with secondary thrombosis plays a greater rôle in arterial occlusion than primary thrombi, yet the close relation of the latter to the former, as in this case, accentuates the necessity of such careful analysis in order to establish the dependence of the one on the other.

The pathologic findings in the following case place it in the category of primary arterial thromboses, and I

* Read before the Marion County Medical Society, Indianapolis, Ind.

have given *seriatim* the phases of the case from the point of clinical interest, and have endeavored to analyze them with reference to their influence in the production of the thrombus.

Patient.—Mrs. X., a patient of Dr. H. O. Pantzer,[1] was first seen March 10, 1905. She was a rather small woman, anemic (skin of a greenish hue), poorly nourished, 47 years old, though much older in appearance, and showed the lines of much suffering and wasting. Her only complaint now is that of repeated attacks during many years of colicky pains in the gall-bladder region, and lately she becomes jaundiced during the attacks.

Physical Examination.—The heart was not enlarged; its action was regular and sounds were normal. The radial artery was soft and easily compressible; temporals could be seen, but were faintly outlined and soft. The lungs were negative. In the abdomen, in the region of the gall bladder, a pear-shaped tender mass projected below the free border of the ribs. The liver dimensions otherwise were normal.

Operation and Result.—April 1, under chloroform, cholecystotomy was done, and many gallstones were removed. Convalescence was uneventful until April 9, when the patient had an attack of severe abdominal cramps in the epigastric and hypogastric regions and to the left of median line, accompanied by repeated vomiting. An enema was given, and this was followed by a discharge of a large amount of disintegrated blood and some fecal matter. Nothing was found in vagina or rectum to account for the bloody discharge. Twelve hours later there was a similar discharge of gases, fecal matter and blood. Pain gradually localized itself in the abdomen just below and to the left of umbilicus, where an indefinite tumefaction could be made out, with marked tenderness over same. Castor oil was given and free evacuation of bowels followed; the stools were normal. Pulse was 120; temperature, 101.4.

Further Course of Disease.—There was general and local improvement. Pulse and temperature were nearly normal. Early in the morning the patient complained of sharp pain and numbness in the left ankle and foot extending to knee, but after a few hours this entirely disappeared, and nothing unusual was observed in the foot. Twenty-four hours later the patient experienced a sudden, excruciating pain in the left foot extending to the knee. When seen six hours later the foot was pale, cold, and extremely tender to slightest touch. The veins were apparently empty in this extremity; there was no pulsation in the anterior tibial artery and but very slight pulsation in the left popliteal. The left femoral pulsated, but the tension was much less than in the right. By evening, areas of purple appeared over the distribution of dorsalis pedis artery. Physical examination of the heart revealed normal sounds, no displacement; there was no enlargement and the action was regular and forcible.

April 22: The patient's general condition was retrograding, and in her poor state amputation of the limb promised little. She was removed by her relatives to her home out of the city.

May 3: The patient was visited in her home. Her general condition was better than when seen last. The tongue was dry and coated; the skin and sclera were yellowish. Temperature ranged between 99 and 102 in morning and went to 103 in afternoon. Since arriving home the affected limb has been immersed in moist and dry hot applications. The gangrene had continued to spread, and the entire foot and leg were dry and black. An indefinite mass could still be made out on deep palpation of the left side of the abdomen; it was slightly tender. No bruit could be heard over this on auscultation. Bile still discharged from the now fistulous wound. No pulsation could be felt in the popliteal or femoral arteries. Over the latter's course a hard, thick cord could be made out.

Amputation and Result.—It was decided to amputate the limb, and this I did, with the kind assistance of Dr. Pantzer and the physician in daily attendance. Amputation was done at the beginning of the middle third. On cutting through the femoral vessels, a mixed thrombus was found to occupy the artery and a red thrombus the vein. There was some bleeding from the arteries in the anterior part of the limb, but active spurting from those in the posterior part on removal of the constrictor. The deeper circulation was evidently maintained by the crucial anastomosis. The skin circulation was not so good anteriorly as posteriorly. There was bleeding from the nutrient artery of the femur. The flaps were united, drainage inserted to inner angle, and wound dressed. The patient recovered without shock.

May 26: Margins of stump after the first week began to show malnutrition, and shortly thereafter necrosis of the flaps occurred, with separation of the same. The general condition gradually retrogressed. Temperature ranged between 99 and 101, and pulse from 90 to 130. A marked marasmic state supervened, and the patient died.

Autopsy.—After much persuasion, an incomplete autopsy was granted by the relatives, the result of which follows:

The brachial artery in the left arm had been injected with a formalin solution. There was pronounced rigor mortis. The stump of the amputated limb was powdered with some drying material. The flaps showed marginal necrosis; the bone stump was dry. A small amount of clear fluid was in the pericardium. The heart was of normal size, the valves were glistening and white, and there was no evidence of endocarditis. The ventricles and right auricle contained a small amount of blood; no thrombi or ulcerations were found on the valves or on any part of the endocardium. The first part of the aorta was examined; the valves of this, as well as of the pulmonary artery, and the vessel walls showed no changes.

Abdomen: There was a very slight amount of clear fluid in the peritoneal cavity. The omentum was found intimately adherent to the anterior and lateral abdominal walls in the left iliac region and to a coil of small intestines, which it almost completely hooded in. This coil of small intestines, about eight inches in length, was situated below and to the left of the umbilicus. It was acutely kinked on itself, much distended, the contiguous margins of the kink closely adherent, and the whole coil adherent by not marked adhesions to the lateral and posterior abdominal walls. At points near the beginning of the upper limb of the kink and near the end of the lower limb were two apposed necrotic areas, the size of a 10-cent piece, and opposite the mesenteric attachment, which had involved nearly the whole thickness of the intestinal walls. Coincidentally, this entire mass was directly over the left common iliac artery.

Stomach: This viscus was contracted and small, and presented no evidence of inflammatory thickening or tumor.

Liver: This organ was small, anemic, and on section apparently the seat of fatty changes.

Spleen and Pancreas: This was somewhat enlarged and hard, and the pulp was deeply congested.

The pancreas was not enlarged, but was anemic. On section nothing abnormal was noted. The splenic vein was not thrombosed, and the retroperitoneal glands not enlarged.

Left kidney: The capsule was somewhat thickened and in places adherent. On section the tissue was pale; the striæ were well shown.

Arteries: The left common iliac artery contained a thrombus up to about three-quarters of an inch above its bifurcation into the internal and external iliacs. The left common iliac and external iliac were dissected out and removed for examination to a point about an inch above Poupart's ligament. The femoral artery and vein were also dissected out and removed to one inch below Poupart's ligament. The popliteal artery and vein were dissected out and removed from the amputated limb, which until now had been kept in a strong formalin solution. The dorsalis pedis artery, with the tissue around, was in part excised, its lumen was not obstructed and contained but a thin clot.

Histopathology.—The kidney showed marked parenchymatous degeneration, affecting chiefly the convoluted tubules. The glomeruli, for the most part, were considerably contracted; there was congestion of the cortical blood vessels, but no interstitial deposits. The whole aspect was that of a parenchymatous degeneration of considerable degree. The arteries of the kidney show no arteriosclerosis whatever. The

1. This case occurred in the service of Dr. H. O. Pantzer, of Indianapolis, to whom I am indebted for the privilege of reporting it.

liver showed moderate fatty degeneration, without special reference either to the central or peripheral parts of the lobule. The pancreas was negative.

Section of arteries: Commencing about one-half of an inch from the upper end of the common iliac section (really the lower half-inch of the artery), the intima was very much thickened (due to proliferation of the subendothelial layer) and projected into the lumen for about 1/5 the diameter of the vessel. This was a node in form, as a very short distance below and above this the intima was but slightly thickened. The media showed a granular degeneration opposite the intimal thickening and was thinned out here. The adventitia showed no thickening or infiltration. The vasa vasorum showed no changes. The contained thrombus was, for the most part, of the mixed type, varying with red. Examining the thrombus from above downward, the first evidence of organization was seen at the beginning of the external iliac artery. This organization sprang from the intima on the same side as the intimal node above, and consisted of a stroma of fairly old connective tissue, and projected into the lumen of the vessel for about one-third its diameter. This was the only point in all the sections of the arteries where there was organization, and this was most probably the oldest part of the thrombus. The intima in the different sections was very slightly thickened throughout. The media nowhere else, except in the part mentioned, showed any degenerative changes or round-celled infiltration. The vasa vasorum showed no obliterative endarteritis in any part of the sections. The internal iliac (a small section examined), besides containing a mixed thrombus, showed no structural changes. The popliteal and femoral veins, in the sections examined, contained a red thrombus for the most part; some of the sections, however, showed mixed thrombi. That part of the femoral vein just below Poupart's ligament showed beginning organization; this was the only point in the veins where organization was found. Bacterial staining was made only of the thrombus contained in the popliteal artery, but no bacteria were found. This was the only part of the thrombus examined for bacteria, first to establish the presence or absence of a bacterial embolus, and, second, to determine if that part of the thrombosed vessel above the amputation, exposed to contamination as it was, would offer no proof as to whether or not the primary thrombus contained bacteria.

Remarks.—The study of the physical signs and the histopathology in this case—the soft radials and temporals, and the absence of degenerative or other changes in the walls of the other large vessels examined—would point to the primary changes found in the common iliac as a local process.

DISCUSSION OF THIS CONDITION.

In determining the etiologic factors in the production of this localized arteriosclerosis, there were conditions which do not harmonize with the usual course in the arteries after syphilis or senility—there were no caseation or calcification, no cellular infiltration, nor were the vasa vasorum opposite the intimal thickening (or at any other point) in any but a normal condition. The change seemed to have been primarily in the media, in the form of a granular degeneration; the media was thinned out at this point and compensatory hypertrophy of the intima followed. There was entire absence of specific history or symptoms of alcohol or gouty manifestations, yet, in the presence of a parenchymatous degeneration in the kidney and fatty changes in the liver, there must have been some other toxic influence present, probably from the gangrenous intestine, and the intestinal disturbance following.

It is evident, also, from the microscopic findings in the artery, that the thrombus formation began not at the point of greatest intimal thickening, but at a point about half an inch below. This being the oldest part of the thrombus, it was from here, most probably, that the embolus was cast off, and from this a secondary ascending thrombus resulted. From the sequence of events the embolus most probably lodged in the anterior tibial artery.

The compression of the common iliac by the mass of intestines bound down above it lent its influence in affecting the blood current at this point, and the formation of slight eddies beyond the projection of the intima would seem a most natural site for thrombus formation, and at this point, indeed, was found the oldest part of the thrombus.

We have here, therefore, the cardinal factors in thrombus formation, namely: disturbance in circulation; local lesion in the vessel wall; changes in the chemistry of the blood—a marasmic state which may have been primary or secondary to the toxemia from the intestines.

The diagnosis of the embolus in this instance was typical of such a state. The first embolic impact, though marked, was not intense. Then followed a subsidence of the symptoms after a few hours, and twenty-four hours later there followed what I believe to have been a second embolus, when the symptoms were sudden and very intense.

The occurrence of a "reflex chill" at the time of embolic impact was absent in this case. Dr. W. H. Welch states that chills associated in such cases are due usually to infection rather than to vascular plugging.

The temperature about the time of the embolism was 99+, rising to 100+ (rectum) in the evening. The patient had a slight elevation of temperature before this attack, and the amount of temperature due to the embolism or thrombosis can not be stated. Dr. Welch states that, independently of the intervention of pathogenetic micro-organisms, arterial embolism may be accompanied by temperature. Gangolphe and Courmont attribute the fever sometimes observed after arterial occlusion to the absorption of pyretogenetic substances which they find in tissues undergoing necrobiosis.

The prognosis in cases such as this one must necessarily be grave. I can not see how any assistance can be rendered in saving the limb or even the life in a case like the one I report, unless cicatrization and healing first take place in the original site of the thrombus, from which point secondary emboli may continually be displaced, and from which, in turn, other thrombi are formed, even if the primary thrombus itself does not become an occluding thrombus.

TREATMENT.

From the pathologic findings in this case it would seem that, barring the infectious emboli, conservatism, namely, awaiting definite developments in the part, is the safest manner of handling such cases. At first palliative measures should be used for the encouragement of collateral circulation, provided, of course, that from the anatomic conditions this can be accomplished, and if the process is not rapid. Routine treatment in general consists of elevating slightly the affected limb and enveloping it in warm compresses or solutions. In the palliative treatment I would suggest, further, that the affected limb should be treated most aseptically. The limb should be shaved and the part thoroughly cleansed and kept continuously under the influence of mild antiseptics, preferably dry, so that in case of local gangrene the danger of sepsis is largely avoided and more time allowed for the recovery of the part or for a line of demarcation to form. Beginning with the onset of the embolism or other evidence of thrombosis it would seem

that the iodin preparations should be given to aid in the absorption of the new-formed tissue, as well as to treat a possible specific basis for the arteriosclerosis. If the resulting gangrene is so extensive that amputation is necessary, this, of course, must be done, but well up in healthy tissue, where this is possible.

224 North Meridian Street.

RETENTION OF URINE CAUSED BY ENLARGED PROSTATE AND RELIEVED BY PROSTATECTOMY.*

GEORGE W. KING, M.D.
HELENA, MONT.

Patient's History.—Twelve years ago the patient had an attack of retention while out prospecting and had to travel a distance of fifty miles to reach medical aid. He was easily relieved by the use of a catheter and instructed in the care and use of the instrument. By its aid he was enabled to go on with comparative comfort until a recent date.

For many years he has resided alone in a cabin situated near an infrequently traveled road, and when the present attack of retention came on there was no available way of securing assistance. He had been a sailor at one period of his career and having a flag in his possession he naturally conceived the idea of floating it at half mast as a distress signal. After some days, fortunately, it attracted the attention of a passerby who went into the cabin, and, discovering his condition, took him to the nearest physician where an attempt to pass a catheter was made without success.

View of the prostate removed; weight, 5½ ounces.

Hospital History.—He was immediately sent to the hospital and came under my care. He had a history of five days' retention and there were already symptoms of uremia. Obviously the first thing to do was to relieve the retention by the usual method if possible. The prostatic obstruction was found to be so great that no form of soft catheter could be passed. A metallic instrument with long curve was made to enter the bladder without serious difficulty and a considerable quantity of bloody urine evacuated. The amount taken away did not exceed one-third of the contents of the bladder. This was amply sufficient to afford temporary relief, which was the most urgent indication at that time. By this plan too sudden reduction of pressure on the bladder, ureters and kidneys was avoided and time was gained for further investigation. The introduction of the instrument caused so much pain it was used but twice in the twenty-four hours instead of at shorter intervals. This treatment was continued during the three days preceding the operation. The obstruction being seated so high up in the pelvis, it was a debatable question which route to choose. The peroneal was finally decided to be the safer in this instance and was therefore given the preference.

Operation.—The operation was begun with the expectation that it would be difficult and so it proved to be. The growth could not be brought down by the sound or by any of the tractors designed for the purpose; hence the work had to be done almost entirely by the fingers, guided by the sense of touch, to define the boundaries of the diseased tissue. By patience and perseverance the mass, as seen in the accompanying illustration, was removed and free drainage established. The patient withstood the operation remarkably well for one of his years; there was no shock, and no elevation of temperature after the reactionary stage had passed. He was allowed to get up when he pleased. In fact, he did get out of bed on the day following the operation, but of course did not move about much for a day or two.

His convalescence has been exceptionally rapid, a small amount of urine came through the natural passage on the sixth day, which is not the rule. With a complete healing of the wound I believe his troubles will be over.

* Presented at a meeting of the Lewis and Clark County Medical Society.

ICE-BAGS AND WHEN TO USE THEM.

P. A. AURNESS, M.D.
MINNEAPOLIS, MINN.

The reluctance with which the laity used to submit to the application of ice-bags or to the use of cold water in disease is fast disappearing. Wholesome and general awakening to the full appreciation of the great remedial power possessed in the scientific application of simple means like water and its different forms, vapor or ice (hydrotherapy, thermotherapy or frigerotherapy) instead of relying on antipyretic and analgesic drugs, when fighting systemic or localized inflammations, is evidence that the teaching of men like Esmarch, Winternitz, Schlikoff and others is gaining ground.

There is, however, still field for educational work, not alone among the laity, but also among physicians, as there are many who still keep on "crossing the river in going after water," as the saying is.

Many medical men know the value of cold applications as well as the danger of antipyretic and analgesic drugs, yet they lack the moral courage to carry theory into practice from fear of being discharged by an ignorant patient for applying anything so "dangerously" cold as an ice-bag. Furthermore, some men relegate themselves to the rear guard of the profession by condemning at all times the use of hydro-therapeutic measures and cold applications in any form, and prefer to stick to the dirty, antiquated flaxseed poultice or to some proprietary "mud" preparation with its cure-all qualities.

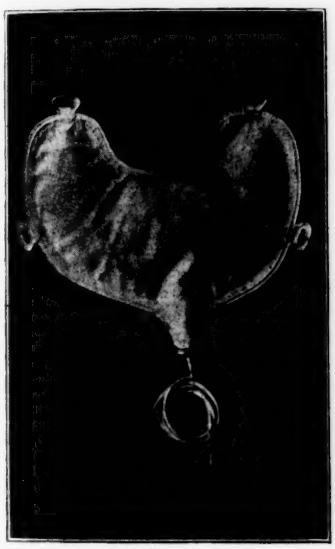
Scientifically considered, heat and cold differ only in degrees, but let it be understood that, although the physiologic effect during their application within certain limits may be identical, there is a distinct difference in the results obtained, when they are applied to parts, where a pathologic process is in evidence.

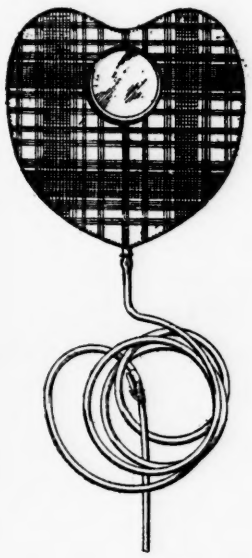
Thus a warm poultice application tends to relieve pain, but it also tends to favor the formation of bacterial growth—the formation of pus—when pyogenic germs happen to be the cause of the inflammation. On the other hand, if an ice-bag be applied to such a region it will not alone relieve congestion and pain, and that

more effectually than any bearable hot application ever can do, but, what is usually of greater importance, it tends to prevent the formation of pus, it will cool the region involved to such an extent, even if the trouble be deep-seated, as proven by Winternitz, Esmarch and others, that the growth of bacteria is retarded, if not entirely checked.

This relation of bacterial invasion and growth to the majority of acute inflammations is an established fact, and it is further true that such growth is retarded or entirely checked, and that the cardinal symptoms of inflammation, redness, heat, pain and swelling are effectually relieved and even the fever of a systemic infection materially reduced by the proper application of ice-bags. It is the opposite of good treatment to apply warm applications to acutely-inflamed regions, especially when pus-producing germs are suspected to be at work, unless the purpose be to aid in the production of pus, which seldom is the case and never should be, if treatment is started early.

Heat, particularly moist heat, has its place and is of considerable utility when it is a question of aiding Nature to remove inflammatory products and when the acute process is at an end, as, for instance, after crisis





in lobar pneumonia or for the elimination of serous exudates. Cold, on the other hand, is indicated in the majority of acute ailments, but it should be remembered that the selection of the form of cold to apply is of the greatest importance in the physiologic effect produced. A cloth wrung out of cold water and applied to an inflamed area produces at first a certain amount of nervous shock, absorbs heat, contracts the blood vessels and thereby lessens congestion. Removing this cloth, wringing it out from cold water and again replacing it creates a distinct irritation or stimulation of the parts, a process of reaction, an increased blood supply and a dermic stimulation that is frequently undesirable, particularly when the inflammation is caused by bacterial invasion. In all such cases the object should be to apply a form of cold in which the cooling agent is of constant and lasting degree and in which the degree of cold is one that will help to retard or to check bacterial growth, to relieve congestion and pain and at the same time do no injury to the vitality of the parts covered. Uniform currents of cold water, cold air, the use of liquid air, freezing mixtures, etc., have all been tried, but no form of cold is more simple and better suited for the purpose than melting ice, when properly applied.

In order to apply melting ice properly the ice-bag should be one that is provided with a drainage tube, so that the water from the melted ice is constantly drained off, and in which the degree of cold used is constant, thereby utilizing the enormous amount of heat required to liquefy ice, the difference between melting ice and ice-cold water as a heat-absorbing agent being as 80 to 1, measured by calorimeter in centigrade degrees. The importance of drainage in ice-bags, therefore, is evident. Without such provision ice-bags, soon after their application, become more or less filled with water and air, forming a rolling body hard to keep in place, which gives only the effect of cold water—so greatly inferior to that of melting ice. A drain ice-bag filled with crushed ice to such an extent only that its weight can cause no obstruction to the circulation of the parts to be covered is the ideal form of ice application. Such an ice-bag, when water and air are pressed out at the time of applying it, remains collapsed and holds the ice between the walls of the bag by the outer pressure of the air and, furthermore, retains any shape given it till the ice is melted. Thus it can readily be made to fit the head, neck, chest, abdomen or a joint.

Of diseases in which the application of ice-bags is of great importance as an auxiliary remedy the following may be mentioned: Acute meningitis, acute mastoid disease, acute tonsillitis, lobar pneumonia (with marked success), acute pleurisy, acute endocarditis and myocarditis, acute hepatitis, acute gastritis, acute rheumatic arthritis and acute synovitis, acute enterocolitis, acute peritonitis and acute pelvic diseases, acute cystitis, acute appendicitis (of great benefit), hemoptysis, hematuria, typhoid fever (to head and abdomen), scarlet fever (to head), erysipelas (to region involved), neuralgia, headache, etc.

My drain ice-bag and specially designed pneumonia bag now in use at many hospitals are shown in the accompanying illustrations.

SCHISTOSOMA HÆMATOBIUM IN THE CANAL ZONE.

M. EARLE HIGGINS, M.D.
ANCON, PANAMA.

The following cases of infection, with the blood fluke, *Schistosoma hæmatobium* (bilharzia), occurring in routine stool examinations, would indicate that this parasite is not an uncommon one in the Canal Zone, particularly among the negro laborers from Martinique:

CASE 1.—Martinique negro; male. On Isthmus one month (Culebra). Admitted Dec. 2, 1905, with lobar pneumonia.

Stool: Ova of bilharzia and uncinaria.

Blood: On admission this was negative for malaria; nine days after crisis leucocytes were 9,500; hemoglobin, 40 per cent.

Urine: During the height of fever there was a slight trace of albumin, with a few hyaline and granular casts. Albumin and casts disappeared before discharge. Sedimented specimens showed no blood or ova.

There were no bladder symptoms.

CASE 2.—Martinique negro; male. On Isthmus one and one-half months (Panama). Admitted Dec. 10, 1905, with malaria and bronchitis.

Stool: Ova of bilharzia and uncinaria; *Tricomonas intestinalis.*

Urine: Negative; sedimented specimens.

No bladder symptoms.

Blood: Ameboid rings; estivo-autumnal parasites; leucocytes, 4,200; hemoglobin, 35 per cent.

CASE 3.—Martinique negro; male. On Isthmus three months (Paraiso). Admitted Dec. 12, 1905, with anemia.

Stool: Ova of bilharzia and uncinaria; embryos *Strongyloides stercoralis;* a few red blood cells.

Blood: Leucocytes, 9,300; hemoglobin, 77 per cent.

Urine: Negative. Centrifugalized specimen showed no ova or blood.

No bladder symptoms.

CASE 4.—Martinique negro; male. On Isthmus two months (Paraiso). Admitted Dec. 22, 1905, with anemia.

Stool: Ova of bilharzia, uncinaria, *Trichocephalis dispar* and *Ascaris lumbricoides.*

Blood: Leucocytes, 5,800; hemoglobin, 57 per cent.

Urine: Negative.

No bladder symptoms.

An interesting feature of these cases is that they were all benign; none of the patients apparently suffered any inconvenience from the presence of the parasites. Ova of the *Uncinaria americana* or *Anchylostoma duodenale* (both parasites occur here) were associated with every case, and probably produced the concomitant anemia. None of the patients presented any bladder symptoms, and no ova or blood was observed in the urine (microscopic examination of sedimented specimens in three cases and of centrifugalized specimen in one case).

A careful examination of the rectum of each patient showed no appreciable ulceration or polypoid growths.

The ova corresponded to the usual descriptions, and in every instance the characteristic spine was laterally situated—a point which Manson suggests may indicate a distinct variety of the parasite, with oviposition only in the bowel. In Cases 2 and 4 the ova were fairly numerous, two or three occurring in each cover-slip preparation. In the other two cases they were less frequent—one ovum to two or three preparations.

Brem, who first observed the ova at this hospital, saw the following three cases:

CASE 5.—Martinique negro. On Isthmus two months. Past history of painful urination and hematuria. While in the hospital he had a cystitis with retention.

Stool: Ova bilharzia and uncinaria; blood, pus and mucus.

Urine: Sedimented specimen showed numerous pus cells, but no ova or blood.

Defecation was painful.

CASE 6.—Martinique negro.

Stool: Ova of bilharzia and uncinaria; no blood.

Urine: Sedimented specimen, no ova or blood.

CASE 7.—Venezuelan.

Stool: Ova of bilharzia and uncinaria; no blood; large unknown ciliated monad.

No bladder symptoms.

Urine: Negative for albumin; no microscopic examination.

While six of the seven cases were in negroes, who had recently come to the Isthmus from Martinique, the occurrence of the parasites in the Venezuelan shows that the infection is not confined entirely to the former country.

A NEW AND PHYSIOLOGIC EXPLANATION OF A COMMON PSYCHOLOGIC PHENOMENON.

F. PARK LEWIS, M.D.

BUFFALO, N. Y.

On first viewing an unfamiliar scene many people have, doubtless, experienced the curious sensation of having seen it before. This may have been obviously impossible. It may have been in a part of the world visited for the first time and yet there is a feeling so haunting in some instances as to be distressing—that it is all a repetition of something that has occurred in the indefinite past.

This is a phenomenon so common that various theories have been offered in explanation. The most commonly accepted is that of the psychologist, who tells us that at the instant of the first glance the mind is pre-occupied and that a space of time, which may be infinitely minute and imperceptible, elapses before the intelligence can grasp the meaning of the sensual impression and interpret it into a cognizable fact. In the realm of the subconscious there is no measure of time—as on the limitless ocean or in infinite space, there is no estimate of distance. One mental impression bears the relation to another mental impression which is not consensual with it, as being merely before or after, but how long, before or after, the mind is incapable of determining. The conscious sensation conveyed to the intelligence is merely that at some former indefinite period, which in point of fact is an infinitely small space of time, although it may seem years away, the same mental picture had been presented as that which is now obviously evident. Almost coincident, then, with the view is the impression of a former view, and as they are not perfectly blended the one is associated with the memory of the other. That we have no estimate of time in our subconscious state is shown in dreams. Here we seem to pass through years in time that is measured by seconds. The well-known illustration will be recalled of a man who dreamed that he had enlisted in the British Army—was sent to India—served through many experiences—deserted—was recaptured—tried by court-martial—sentenced—led out for execution—placed before the detailed squad and a volley fired. He had been asleep less than a moment and the same noise which had aroused him had excited the long and involved dream.

Recognizing the fact that the conscious intelligence is unable to form any judgment as to the length of time that intervenes between two sensual impressions that follow in quick succession, a more logical explanation than the accepted one can be given of this not uncommon phenomenon.

In order that a clear and definite picture of that which we see may be conveyed to the brain, the two retinal images must be blended at the cerebral visual centers as the two views of a single scene are blended by a stereoscope. In order to have an efficient working instrument, the stereoscopic lenses must be focused alike; and to have a binocular blending of images in the more delicate focal adjustments which are governed by nervous action and muscular effort the eyes must be alike.

According to the experiments of Sulzer, of Paris, based on the discoveries of experimental physiology, the accommodative act in the normal human eye is accomplished in about 2/100 of a second. In the hyperopic or astigmatic eye, in which greater muscular effort is required to focus the visual rays on the retina, manifestly the accommodative act would be produced less quickly. In cases in which the two eyes are definitely unlike the focal acts are not coincident, and it may easily take 4/100 of a second, or twice the length of time that is required by the more nearly normal eye for the less perfect eye to define the retinal picture and convey its impression to the cortical sight center. An interval of 2/100 of a second would thus intervene between the times that the same picture was focused on the two retinæ and received by the brain, an interval too short to be recognized by the individual but long enough to give two distinct impressions to the mind with a vague, an indeterminate, an immeasurable space of time between.

It is very probable that auditory differences of a like character may sometimes exist, but even when this does not occur, when, owing to refractive differences in the eyes, the faculty of concomitantly blending sensual impressions into intellectual conceptions has been lost, the habit of syncopating impression (if the term might be employed in this connection) will have obtained, and the brain will receive a double impression, whether the images are of visual or auditory character.

That this explanation is a correct one finds its verification in the fact that those to whom this phenomenon is of common occurrence find that it disappears when focal differences are corrected by proper glasses, permitting thereby concomitant action on the part of the ciliary muscles of both eyes.

It will be seen, too, that refractive differences, when marked, and in those of especially unstable nervous dispositions, may cause a mental confusion which is also relieved by the visual correction. Such a case, found in a state hospital for the insane, in my clinic, was cured by a correction of the refractive and muscular inequalities.

As this is a new as well as a rational and physiologic explanation of a common phenomenon, and one easily submitted to a demonstrative test, I will be indebted for any verifications with which I may be favored in which this sense of double impression disappears after a refractive correction. I will be glad, too, to receive a copy of the prescription showing the refractive differences in the eyes.

454 Franklin Street.

THE DIRECT READING OF ACIDITIES OF GASTRIC CONTENTS.*

GEORGE WILTON MOOREHOUSE, M.L., M.D.
CLEVELAND, OHIO.

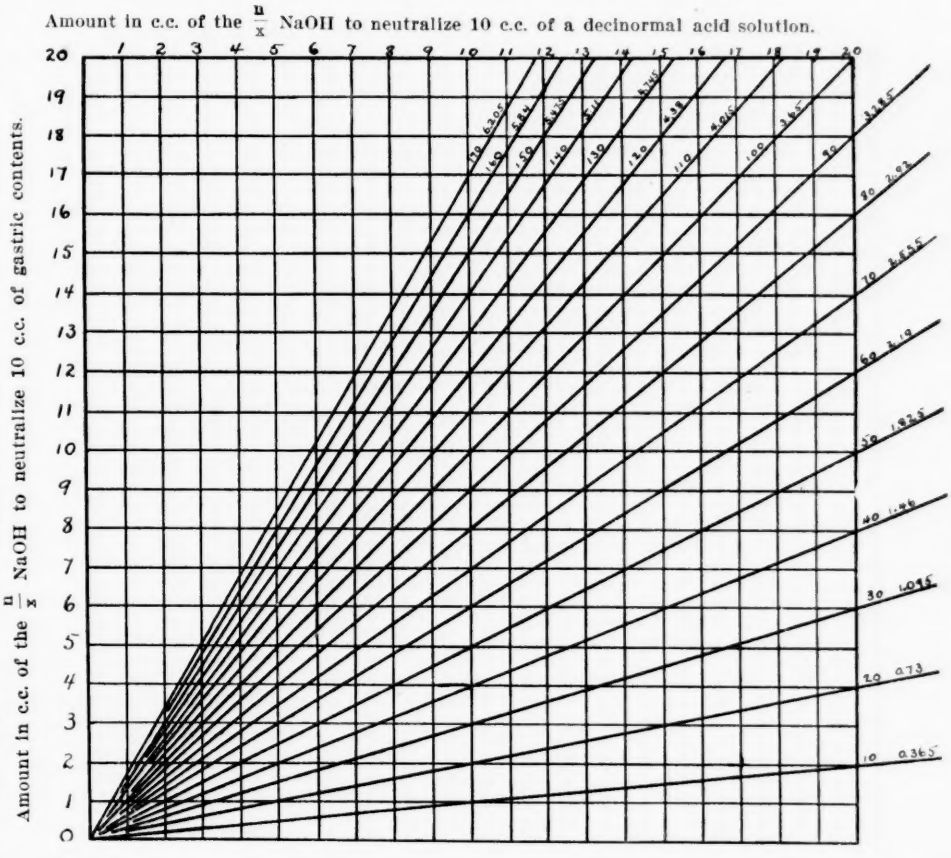
In the quantitative determination of the acidity of gastric contents a decinormal solution of sodic hydrate is usually employed. Each cubic centimeter neutralizes an acidity equivalent to .00365 gm. of hydrochloric acid. Six cubic centimeters is ordinarily considered an average amount to neutralize the total acidity of 10 cubic centimeters of normal contents. The acidity of gastric contents is most commonly expressed by multiplying by 10 the total number of cubic centimeters of N/10 NaOH required to neutralize 10 cubic centimeters of gastric contents. A normal total acidity is, therefore, about 60. The solution of sodic hydrate, however, is not permanent; should it be accurate when received from the chemist it will not be accurate after a few days, and the variations may be considerable to one using it infrequently.

To minimize the difficulties imposed by constant change in the concentration of sodic hydrate solutions some workers determine at frequent intervals the value of their solutions of alkali, and express the acidity of gastric contents in grams per hundred or per thousand. This involves titration and computation as frequently as necessary to determine the value of the sodic hydrate solution; titration and computation to express the result in grams per hundred or per thousand, and a further computation before it is possible to express the result in the terms which are more generally understood and more easily remembered. It is probable, however that a considerable number of those who express the results in the simpler form replace their solutions at whatever intervals they consider necessary to insure sufficient accuracy, and always consider the value of the solution to be .00365. Such renewal of solutions is an unnecessary expense, since the titration of the alkaline solution to determine its value is hardly more troublesome than sending the bottle to the chemist for standardization would be.

The use of the accompanying diagram makes accurately decinormal solutions of sodic hydrate and computations unnecessary in quantitative examinations of the acidity of gastric contents. With sufficient frequency, about once a month, the number of cubic centimeters of alkaline solution to neutralize 10 cubic centimeters of a true decinormal acid solution should be determined and recorded. In use with gastric contents, it is necessary only to determine the amount of alkaline solution in cubic centimeters to neutralize, first, the free hydrochloric acid of 10 cubic centimeters of the gastric contents, and, second, its total acidity. With these facts determined, the acidity of the gastric contents may be read from the diagram either in grams per thousand or as 60, 70, etc., the more common method of expression.

The vertical lines represent the number of cubic centimeters of a N/x NaOH required to neutralize the 10 cubic centimeters of decinormal acid solution. The horizontal lines represent the number of cubic centimeters of this solution of alkali required to neutralize 10 cubic centimeters of gastric contents. On the diagonal, passing (actually or by interpolation) through the point at which these lines cross, may be read off the acidity of the gastric contents, both methods of expression being given.

Examples: If 10 cubic centimeters are required to neutralize the decinormal acid solution and 6 to neutralize the gastric contents, follow the vertical line 10 down to the line 6. Where these lines intersect a diagonal line may be found which is marked 60 and 2.19. This means that the acidity of the gastric contents is 60, or, expressed in terms of hydrochloric acid, contains 2.19 gm. of acidity to each thousand cubic centimeters of gastric contents.



If but 6 cubic centimeters of the sodic hydrate solution are required to neutralize 10 of the acid and 8 of this alkaline solution are required to neutralize 10 of the gastric contents, follow the vertical line 6 to the point where it is crossed by the horizontal line 8. This brings one between the diagonals 130 and 140, and about one-third of the distance from the lower to the upper diagonal. The acidity is about 133 or 4.877 gm. per mille.

Should 12.5 cubic centimeters of the N/x NaOH be required to neutralize 10 of the decinormal acid and 6.3 cubic centimeters of the former be required to neutralize the gastric contents, the result is 50 or 1.83 gm. per mille.

The accuracy of the diagram has been tested in a number of ways, and the average error in its use seems to be too small to be of any consequence. It is constructed for normal to 1/20 normal sodic hydrate, and for acidities from 0 to 170—from the lowest free hydrochloric to the highest total acidity.

* Read at the meeting of the Clinical and Pathological Section of the Academy of Medicine of Cleveland, Ohio.

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SATURDAY, MARCH 24, 1906.

MEDICAL AND LIBERAL EDUCATION.

All who have been striving to promote solid progress in the American medical profession have taken great interest in the recent efforts to make possible the combination of liberal education, as represented by a preliminary college degree in arts and science, and the exacting requirements of present day medical education. From the comparative low standard of fifty or more years ago, the requirements for admission to college and for obtaining the degree have been gradually and steadily increased until the average age for graduation has been increased two, three or even more years. The graduate of fifty years ago was no more advanced than the present sophomore and besides this the requirement for admission to college was much less exacting. Moreover, at least two additional years have been added to the time required for medical study and this is not optional, but required by state laws, much to the benefit of the standing of the medical profession. As a result of these increased requirements it is seldom possible for a man to get the liberal education represented by a college degree and to take the four years required in medicine before twenty-seven or twenty-eight years of age, and the man does not reach his period of useful activity until he is nearly thirty years old. The increase in time is so great that many men at present do not even try for a liberal education.

That this postponement of a man's practical usefulness should be cut down to two or three years and still leave him the advantage of liberal culture at college is generally admitted. To accomplish this various plans have been suggested. Chicago, Cornell, Michigan, Columbia and a number of other institutions have arranged a combination of courses by which the student may take a degree both in science or arts and in medicine in one or two years less time than the eight years regularly required for both degrees taken separately. Among the institutions not having a medical department, Wabash College allows its students to enter an approved medical college after three years of study and grants the degree in arts at the end of the first year of professional instruction. The cutting down of the required college course from four to three years for all students has been urged on several sides of late. This would not be so great an innovation, however, for Johns Hopkins University has required of its art students only three years of study, and with a liberal range of electives from the start, and for years Yale has maintained a three years' course in its scientific school. At Harvard the present system gives an opportunity to take the degree in three years, and about 15 per cent. of the student body avail themselves of this. We are told that the change has not lowered the standard nor lessened the distinction of the degree.

The discussion of a three years' course as the normal for the degree in arts has recently been taken up at the meeting of the Associated Harvard Clubs and a sixty page report prepared, giving the opinion of the graduate body on the practical side of the question and the actual bearing of period of residence on after life in the professions and in business, specially in the West. The counting of the first year of professional study as the fourth year in college is thought objectionable because it forces the student to discriminate in favor of the professional school connected with the university in which he takes his arts degree, for they consider it desirable that he should choose independently. An abstract of the report, published in the *Harvard Graduates' Magazine,* 1905, vol. xiv, p. 95, will be of interest to all who have been following these questions. There has undoubtedly been a falling off in the proportion of the college educated men taking up the study of medicine and by cutting down the liberal course of study the number would no doubt be somewhat increased again. European experience, where secondary schools are highly organized and well conducted and professional education amply developed, all indicates that four years of liberal study can not be maintained between the school period and the period of professional study. The standards of the secondary schools should be improved and it would not be difficult to prepare the average student for college at least two years earlier than is usual at present. If this were arranged, with the cutting off of one year from the college course, it would be possible for students to graduate in both arts or science and medicine at twenty-four, instead of two or three years later, as is now usually the case. The shortening of the course of liberal study seems more justified from the reason that the mental discipline of the professional course is more valuable than formerly. The shortened course would also tend to lessen the excess of attention given to athletics and indulgence in other diversions injurious to proper attention to study, without depriving the student of reasonable opportunity to enjoy ideal college life. Three years of undergraduate study is sufficient to give the general culture, which is the object of college education, and three comparatively strenuous years are better altogether than the present four years of lax effort.

Whether the suggestions of the committee of the Associated Harvard Clubs will lead to any change of policy by Harvard University will remain to be seen. But the fact that the report of the committee includes letters

and interviews from over fifty persons in business and professional life indicates a live interest in the problem by busy men. Those of the medical profession, who have had the advantages of collegiate training, are general advocates of similar liberal studies for others; and, no doubt, whether these changes are introduced or not, a great proportion of the coming leaders of the medical profession, as in the past, will precede their medical studies by a college course. That the efficiency of education need not suffer by an arrangement which would shorten the course two or three years, we feel sure, and any arrangement that would bring about such an end would undoubtedly be welcomed by students.

EXPERIMENTAL EOSINOPHILIA.

There are two opinions in regard to the relationship between the various forms of white blood corpuscles, the one maintaining their genetic distinctness, the other that transition is easy from one form to another, and well-known hematologists are arrayed on either side.

On account of the large size and the staining properties of their granules, the eosinophilous leucocytes have served as the basis of more study than other forms. Their increase in the blood in certain diseases has considerable importance in diagnosis; as is well known, in trichinosis, for example, eosinophilia is very characteristic, but it may occur in other forms of helminthiasis as well. The behavior of eosinophiles in bacterial infections has long been the subject of investigation, and it has been ascertained that in some infections an increase of eosinophiles indicates a favorable outcome, while diminution in number has the contrary significance. In spite of the many researches these cells have instigated, their origin and their granules still present many problems.

It has been generally taught that the eosinophiles, in common with other leucocytes, are produced in the hematopoietic lymphoid structures, especially the bone marrow; that their appearance in the blood in larger numbers than normal is due to a chemical attraction caused by substances or alterations in the fluids of the blood, and their great excess over other forms of leucocytes in the tissues in certain inflammations and tumors, the so-called localized eosinophilia, has also been explained by chemotaxis.

Now the similarities in appearance and reactions to dyes of the erythrocytes and the granules in the eosinophilous leucocytes have led to suspicions that there might be a genetic connection between the two; indeed, it was once supposed that the red cells were derived from these granules. The exact converse of this, the origin of the granules from the red cells, is also an old idea, but one which has met with little acceptance because of the prevalent belief in the distinct origin and specific nature of each form of leucocyte and their inability to be transformed, one into another.

It is, therefore, of great interest to have rather convincing evidence offered in favor of the assumption that the granules in eosinophilous leucocytes consist of hemoglobin derived from the red corpuscles; in a word, that eosinophiles are essentially phagocytes; and a point of view is presented that may lead to quite radical alterations in our ideas of leucocytes.

Stschastnyi finds a marked eosinophilia in animals a few days after the intraperitoneal injection of either normal alien serum or alien serum with increased hemolytic properties, the so-called immune serum.[1] The presence of eosinophiles in the peritoneal cavity, in the omental vessels and vessels of other adjacent structures in greatly augmented numbers preceding the development of a generalized eosinophilia led him to trace the origin of the eosinophilia in the phagocytosis of erythrocytes, terminating in eosinophilous leucocytes by unbroken transitions, which followed the injections. Phagocytosis was also present in the bone marrow, and here also the eosinophiles were increased in numbers. These experiments indicate, therefore, that the eosinophilia is an expression of the manner in which the organism disposes of its own red corpuscles.

This explanation of the experimental eosinophilia caused by hemolytic sera may throw some light on the increase of eosinophiles observed, for instance, in hemorrhagic pleuritic exudates; also on the eosinophilia appearing after the acme of numerous infectious fevers and on the repeated occurrence of eosinophilia in the afebrile stages of the malarial fevers. It is noteworthy in this connection that phagocytosis of red corpuscles is a part of the histologic changes in many infections. The study of hemolysis has been, for the most part, the study of the solution of the red blood corpuscles of one species by the blood serum of another, a field apparently quite removed from practical medicine. These observations of Stschastnyi must be added to the list, already a long one—many examples have been considered in these columns—of instances in which light has been thrown unexpectedly on obscure processes of spontaneous disease by the study of hemolysis.

"SPIROCHÆTA PALLIDA" IN HEREDITARY SYPHILIS.

"Spirochæta pallida" has been demonstrated in the organs of hereditary syphilitics by a number of observers. Just recently Levaditi publishes an important contributions to this subject,[2] in which several interesting facts are brought to light. Thanks to an improved staining method (impregnation of small pieces of formalin fixed tissue with silver nitrate, reduction with pyrogallic acid, and counterstaining), Levaditi is able to establish more clearly the relations of the spirochete to the lesions in hereditary syphilis than heretofore possible. He shows that organs and tissues most involved in the syphilitic process contain the largest number of organisms, namely,

1. Ziegler's Beiträge, 1905, vol. xxxviii, p. 456.
2. Ann. de l'Inst. Pasteur, 1906, vol. xx, p. 41. See p. 917.

the liver, the lungs, the adrenals, and the skin, in the order given, thus demonstrating the rôle of the spirochete to be more important than that of a mere secondary invader.

In acute, rapidly fatal cases the parasites are more diffusely distributed, in the chronic, tardy cases they are present mostly in the organs affected, e. g., the liver. The parasites appear to become arrested first in that fetal organ, namely, the liver, which is the first to receive the blood as it comes from the placenta. Levaditi pictures spirochetes in the lumen of the hepatic vessels in certain cases; the organisms do not appear to multiply in the blood, however, but to pass into the perivascular tissues and the glandular epithelium. There result endarteritic and periarteritic processes, infiltrations and sclerosis of the connective tissue, and parenchymatous degeneration, all due, it would seem, to the direct action of the organisms themselves, which are present in enormous numbers, rather than to the diffusion of soluble products. The maceration of the syphilitic fetus after intrauterine death is regarded by Levaditi as the result of a widespread secondary autolytic effect and not as due directly to the spirochetes. The presence of organisms within large phagocytic cells, especially in the pulmonary alveoli, would seem to indicate that phagocytosis is an important means of defense against this virus and especially because the organisms are seen to undergo disintegration within the phagocytes. The presence of spirochetes in the lumen of bronchi and also in the renal epithelium indicates that the sputum and also possibly the urine may be infective in hereditary syphilis. Another source of infection is seen in the skin, the papillæ of which, as well as the contents of Pemphigal vesicles, may harbor well-preserved spirochetes.

In doubtful cases the demonstration of *Spirochæta pallida* may settle the diagnosis if, as seems to be the indication, this organism comes to be accepted as the causative agent of syphilis. Already interesting questions suggest themselves as to the mode of infection in congenital syphilis, especially in those cases which we now regard as paternal and conceptional.

THE ZEISS OPTICAL WORKS.

Few of us who use the admirable microscopes which bear the name of Zeiss realize that when we buy one of these instruments we are encouraging a most novel and daring, if not revolutionary, industrial experiment. Carl Zeiss and his partner, Ernst Abbe (the inventor of the Abbe condenser) are not known to the scientific world as altruistic dreamers, yet the record of their experiment in profit sharing and in the application of democratic ideals to industrialism reads almost like the optimistic visions of a Bellamy.

The Zeiss optical works were started in a humble way in Jena as long ago as 1846 under Carl Zeiss, who later, in 1875, took as partner Ernst Abbe. From the first Zeiss seems to have planned the organization of the industry on a co-operative basis, with the guarantee of personal liberty to the employés in all political matters, an unusual departure in Germany at that time. His views, however, were not fully realized during his lifetime, but were developed after his death by Abbe, a man of singular unselfishness and idealism. At Zeiss' death, in 1896, the entire capital invested in the now enormous business was left in Abbe's hands and he handed it over to an organization, the "Carl Zeiss Stiftung," which is established under the laws of Saxony with a trustee appointed by the State to supervise it. For himself Abbe reserved only the modest income of $2,500 a year up to his death, which occurred a short time ago. The 1,300 employés, most of them highly skilled artisans, form now an association which undertakes the management of the business through committees, their avowed object being the payment of wages, not the making of profits.

The management of the works follows principles which would seem to us socialistic in the extreme. There is a regulation that the highest paid official shall not receive more than ten times the average yearly earnings of the average adult workman. An employé who has reached a certain yearly rate of wages can not after that receive any less sum on account of slack times. Most remarkable of all, in case of dismissal for no fault, after three years' employment, the workman receives at least six months' pay. Of course, there are minor advantages, such as the eight-hour work day, holidays on full pay, grants for buying homes, insurance against sickness and death, premiums for new inventions and labor-saving devices of all kinds. These apparent extravagances, however, do not prevent the company from making profits, which profits are partly distributed among the workingmen, the rest being used for extension of the works, for grants to the University of Jena, and for institutions of social amusement and education for the workers themselves. The influence of Carl Zeiss is seen especially in the provision which makes it possible not only for the artisan to join any party or trades union that he may choose, but which encourages him to hold office under the local or imperial government, granting him leave of absence on full pay for the time required to perform his public duties.

Whatever we Americans may think of the ideals of Zeiss and Abbe we must admit that their experiment, now fully ten years old, has proved itself a success in the business world and that the product of this utopian factory has probably no equal anywhere.

VIVISECTION.

A correspondent has sent, for examination and comment, a pamphlet entitled "Illustrations of Human Vivisection," published apparently in Chicago by the "Vivisection Reform Society," an organization the avowed purpose of which is to make vivisection experiments a crime, except when under legal regulation.

While the tone of the pamphlet is generally unjudicial and the author seems to have a strong personal bias against at least one prominent member of our profession, we are willing to assume for present purposes that ignorance, and not wilful malice, must have been the cause of some of his illegitimate inferences, not to use another designation. We would therefore say, for his information, that, in accounts of physiologic experiments, "toxic" does not mean lethal or even necessarily dangerous; that "inoperable," from a standpoint of cure, does not mean that operation to prolong life or to make the remnant easier is unjustifiable; that the administration of pain-relieving drugs to neuralgic soldiers is not inhuman, even if the pulse and pupils were observed, and that it would be usually considered very mild treatment for military malingerers. Forty years ago comparatively little was known of the antagonism of atropin and morphin, and such observations were valuable and the world has profited by them ever since. Other suggestions might be made, but we have probably gone sufficiently out of our way now to set the author of the pamphlet right. It is to be hoped that he will be more careful in the future in his inferences and deductions. THE JOURNAL is in full accord with every right-minded person in denouncing reckless experimentation, but it does not expect to suit some of the antivivisectionists who, ignorantly or otherwise, reject facts when these do not conform to their theories.

GOOD RAILROAD RATES FOR THE BOSTON SESSION.

The Trunk Line Association, covering the eastern railroads, as well as some of the other passenger associations, have granted a rate of one fare for the round trip, plus $1.00, for the coming session of the American Medical Association. Undoubtedly all of the other passenger associations will take the same action, so that we may depend on one-half rates from all parts of the country. An extension of time to June 30 will be granted on payment of $1.00. Those coming from the Pacific Coast points can have an extension of return limit up to August 31. This concession to our friends on the Pacific Coast is made, of course, on the supposition that, after coming so far, they will want to take advantage of the trip to visit friends or to see the attractions of the east. Efforts are being made to secure such arrangements that one may go by one route and return by another, as was the case last year. Whether or not such concessions will be granted on the half-rate fare is yet to be decided.

LEGISLATION TO PREVENT THE SALE OF UNDRAWN POULTRY.

Senator Gallinger has introduced into the United States Senate a bill making it "unlawful for any person, firm or corporation to sell, offer or expose for sale, within the District of Columbia, any poultry, refrigerated or otherwise, which has not been properly drawn and prepared by removing the viscera at the time of slaughter." Violation of the act is punishable by a fine not exceeding one hundred dollars, or by imprisonment not exceeding thirty days, or both. The bill was referred to the Committee on the District of Columbia and by that committee recommended for passage. The necessity for such legislation will be recognized by those who have given the matter thought. The keeping of meats, eggs, vegetables, fruits, etc., in cold storage has grown to such enormous proportions that it would seem that in the large cities the greater bulk of our foods is being so preserved. To what extent such foods are injurious or are depreciated in their food value has not been sufficiently investigated to come to definite conclusions, but undoubtedly many articles so preserved do depreciate in many ways and become a danger to health.

THE AUTOMOBILE NUMBER OF THE JOURNAL.

To no one class of people is the automobile of more practical importance as a business proposition than to physicians. Whether in the city or country, the physician needs a means of quickly, safely and surely reaching his patients—and of getting home again. On account of this general interest of physicians in the subject, it is believed that a special number of THE JOURNAL devoted to a discussion of the automobile as a conveyance for physicians will be of practical interest and will be welcomed. We have had such a number in hand for some weeks, and have already received a large number of articles on the subject, but we shall be glad to hear from any physician who has had practical experience and who has not already written us. We want both sides. The expense and the difficulties connected with the machine as compared with the horse, the type of car most practical, technical points connected with gears, transmissions, cylinders, fuel, cooling apparatus, tires, etc., are important items for discussion. Articles must be brief, terse and to the point, as the space devoted to the subject must necessarily be limited. All manuscripts should be received by April 2. The date of issue will be April 21.

QUININ IN PNEUMONIA.

It is possible that in emphasizing a certain point in the editorial under the above title in last week's issue we may have been misunderstood, for we came very near to actual overstatement. We said: "In private practice it is no uncommon thing for a busy physician to treat 40 to 50 consecutive cases of pneumonia by the so-called expectant or symptomatic plan, and to have no deaths." It would have been better if we had said that "it may occasionally happen that a physician with a large practice," etc. Undoubtedly, in private practice, and more rarely in hospitals, a considerable series of favorable cases may be met with, especially in the young, and in these cases an unusually favorable outcome may result. We would not imply that the mortality from pneumonia is low, for we have repeatedly shown that the total mortality from this disease is pretty nearly as high as that from tuberculosis. Dr. E. F. Wells published some statistics some time ago in which it was shown that the mortality from pneumonia was 18.1 per cent. This was based on a study of 233,730 cases.[1] We repeat that

1. E. F. Wells: THE JOURNAL A. M. A., 1902.

we welcome any contribution to the subject of treatment of this disease that is based on a careful study of a number of cases, whether by the treatment recommended by Dr. Galbraith or by that which recognizes the disease as a self-limited one and that the *vis medicatrix naturæ* will bring about a cure in the majority of instances.

Medical News

COLORADO.

New Hospital.—The new City Hospital, La Junta, was opened February 12.

Fire in Medical College.—Fire did damage to the amount of $10,000 to the Denver and Gross College of Medicine January 30.

Will Erect Dispensary.—The Denver and Gross Medical College will shortly erect a dispensary on two lots adjoining the College of Music at Fourteenth and Arapahoe streets.

Physician Gets Damages for Injury.—A verdict of $5,500 was rendered against the Inter Mountain Improvement Company in favor of Dr. Fred H. Welles, Victor, who had his left leg and foot crushed between the elevator and the wall of the shaft in a building owned by the defendant, in 1902. He sued for $50,000 damages.

Eastern Practitioners Meet.—The Eastern Colorado Medical Society held its annual meeting January 9 and 10 at Wray, and elected the following officers: President, Dr. Earl D. McGill, Wray; vice-presidents, Drs. W. E. Turner, Brush and George B. Billsborrow, Yuma; secretary, Dr. S. S. Bootay, Akron, and treasurer, Dr. N. J. Phelan, Denver.

Personal.—Dr. Frank N. Carrier, Canon City, has been appointed physician of Fremont County; Dr. James W. Rambo, Florence, assistant county physician, and Dr. Wilbur T. Little, Canon City, county health officer.——Dr. F. L. Bartlett has been elected president, Dr. John W. O'Connor, vice-president, and Dr. William H. Bergtold, secretary, of the Colorado Automobile Club, Denver.——Dr. Michael Beshoar, Trinidad, after forty-three years, retired from active practice February 25.

January Vital Statistics.—During January 939 deaths were reported, equivalent to an annual death rate of 16.8 per 1,000. Scarlet fever caused 13 deaths; typhoid fever, 12 deaths, and diphtheria, 8 deaths, during the month. There were reported during the month 179 cases of scarlet fever, 75 cases of typhoid fever, 49 cases of diphtheria, and 26 cases of smallpox, an increase, as compared with the preceding month, of 60 cases of scarlet fever, 8 cases of typhoid fever, 1 case of diphtheria, and 16 cases of smallpox.

DISTRICT OF COLUMBIA.

Smallpox.—The smallpox situation in the District is becoming serious. All the cases are said to be traceable directly to cases erroneously diagnosed, which remained unquarantined. ——Dr. Arthur C. Stanley, an interne at Garfield Hospital, is ill with smallpox.

Banquet in Honor of Dr. Hare.—The Clinical Society of Washington gave a banquet March 10, the guest of honor being Dr. Hobart Amory Hare, Philadelphia, who delivered an address on "The Relation Between Diseases of the Heart and Diseases of the Arteries."

Hospitals Get Money.—By the verdict of a jury in the Probate Court, March 6, the will of the late Dr. Henry E. Woodbury, which bequeathed the bulk of his estate, valued at about $35,000, to the Garfield Memorial Hospital and the Children's Hospital, share and share alike, was sustained.

Want a Clean River.—A determined effort is being made by the officials of the Army Medical Department, Public Health and Marine-Hospital Service, Medical Society of the District of Columbia, and other organizations, to prevent the pollution of the Potomac River and to improve the sanitary conditions.

FLORIDA.

State Health Officer Indorsed.—By a unanimous vote the Jacksonville Board of Trade adopted resolutions expressing implicit confidence in Dr. Joseph Y. Porter, Key West, state health officer, and urging him to withdraw his resignation. Similar resolutions were adopted by the Key West Chamber of Commerce.

Hospital Closed.—The Emergency Hospital, Jacksonville, was closed February 1 owing to the failure of the city council to make provisions for its maintenance.

Personal.—Dr. and Mrs. Percy J. Stollenwerck, Jacksonville, have returned from Europe.——Dr. George W. Lamar, Quincy, has been appointed by the governor, medical superintendent of state convicts.

Mental Healer Imprisoned and Fined.—After a trial of twelve days Helen M. Post, head of the Mental Science Institute, Sea Breeze, an "absent treatment" institute, was found guilty, February 3, of using the mails for fraudulent purposes and sentenced to pay a fine of $500 and to be imprisoned for thirty days in jail.

New Sanitaria Completed.—The Centro Espanol Sanitarium on the bay shore, Tampa, erected by the Spanish colony of that city and presented to the city of Tampa, was dedicated February 4.——The De Soto Sanitarium, Jacksonville, which is owned and operated by local physicians and has a capacity of 50 patients, is now open to the public.

GEORGIA.

Damage by Fire.—Dr. B. J. Simmons, Milledgeville, lost $1,000 by a fire which did severe damage to the business portion of the city, February 1.

New Laboratory Installed.—The new municipal laboratory, Atlanta, has been installed in the City Hall and is under the charge of Dr. Claude A. Smith, city chemist.

Historic Building Demolished.—The historic old medical college building, Atlanta, which was pressed into service during the Civil War as a Confederate hospital, is being torn down to make room for the new building of the Atlanta College of Physicians and Surgeons, to be erected at a cost of $75,000.

Personal.—Dr. Thomas R. Wright, Augusta, has been reelected a member of the governing board of the city hospitals. ——Dr. Joseph E. Allen has been elected dean of the faculty of the Medical College of Georgia, Augusta, to fill the vacancy caused by the death of Dr. De Saussure Ford.——Dr. Edward Geddings has been elected emeritus professor of physiology and pathology in the Medical College of Georgia, Augusta.——Dr. George Brown, Atlanta, assistant surgeon general, has been commissioned colonel and surgeon general of the National Guard, Georgia, vice Dr. Joseph A. Guinn, Conyers, retired.—— Dr. Samuel H. Green, Chattahoochee, has been commissioned captain and assistant surgeon, National Guard of Georgia, and assigned to the Fifth Infantry.——Dr. Joseph J. P. Bowdoin has been elected mayor of Adairsville.——Drs. William W. Owens, Savannah, and A. P. Taylor, Thomasville, have been reappointed members of the State Board of Health.——Dr. John M. Caldwell, Augusta, city physician for the third district, jumped from his buggy when his horse ran away, February 9, and fractured his leg just above the ankle.

ILLINOIS.

Benefaction to Hospital.—Brokaw Hospital, Bloomington, has received $100,000 from the Brokaw estate.

Acquittal.—In the suit of Mrs. Arthur Ruckman against Dr. Isaac Moore, Alton, for slander, the jury returned a verdict of acquittal.

Smallpox.—It is reported that smallpox of mild type has broken out in Freeport. It is supposed that the disease was imported from Lanark.

Books Given to Library.—Dr. Thomas J. Pitner has given 300 volumes to the Jacksonville Public Library, and the sons of the late Dr. David Prince have donated 700 volumes to the same institution.

Physicians Vindicated.—In the suit of W. P. Eich, Emington, against Dr. Clarence P. Wikoff, Emington, for damages for alleged malpractice, the physician was completely vindicated, as the plaintiff utterly failed to make a case.

Personal.—Dr. Thomas L. Catherwood, Shelbyville, was stricken with paralysis at his home, March 7.——At the last meeting of the Imperial-Royal Medical Society of Vienna, Dr. Nicholas Senn, Chicago, was unanimously elected an honorary member of the society.——Dr. John L. Yolton, Bloomington, was elected physician of McLean County, March 8.——Dr. William Hesert, Chicago, has been appointed surgeon in the Alexian Brothers' Hospital.

Dr. McCormack's Itinerary.—Dr. J. N. McCormack, chairman of the Organization Committee and national organizer for the American Medical Association, will spend the month of April in Illinois. In Dr. McCormack's reply to the invitation of Dr.

H. C. Mitchell, president of the Illinois State Medical Society, he urges the importance of securing the attendance of laymen at all meetings. The invitations should include senators, representatives, municipal and county officials, the pastors, bar and teachers' associations, druggists, W. C. T. U. and other clubs, as well as business men generally. He says: "I am discussing the scientific and business affairs of the profession, the 'patent-medicine' question, and other matters of this kind before popular audiences every day, and I find that it enables me to strengthen the profession with the public in a way that has never seemed possible before." The itinerary for Dr. McCormack as now arranged is as follows:

Councilor District 9.—Carbondale, April 2; Mt. Vernon, April 3.
Councilor District 7.—Centralia, April 4; Decatur, April 5.
Councilor District 8.—Olney, April 6; Newton, April 7; Champaign, April 12.
Councilor District 6.—Pittsfield, Quincy, April 9; Mt. Sterling, Virginia, Jacksonville, April 10; Carrolton, Carlinville, Alton, April 11.
Councilor District 5.—Lincoln, April 13; Bloomington, April 14.
Councilor District 4.—Galva, Rock Island, April 16; Monmouth, Macomb, April 17; Peoria, April 18.
Councilor District 2.—Pontiac, April 19; Ottawa, April 20; Sterling, April 21.
Councilor District 1.—Freeport, April 23; Rockford, April 24; Aurora, April 25.
Councilor District 3.—Joliet, April 26; Chicago, April 27-28.

The meeting places and other local arrangements will be announced in the various towns and councilor districts by letter and through the local press.

Chicago.

Arrest Spitters.—Acting under orders from the chief of police, a crusade has again been begun against men who expectorate in street cars and other public places.

Hospital for Acute Alcoholism.—Alderman Scully has introduced an ordinance in the city council providing for the construction and maintenance of a hospital for the treatment of acute alcoholism.

Sues Advertising Specialists.—Adolph Sieffert on March 12 sued the Auld Medical Company for $80, which he claimed to have paid under contract that he was to be cured of a disease which had been pronounced incurable by physicians.

Deaths for the Week.—The total deaths from all causes for the week ended March 17 were 555, 52 less than for the previous week and 2 less than for the week ended March 18, 1905. The respective annual death rates per 1,000 were 14.10, 15.44 and 14.57. Pneumonia caused 99 deaths; consumption, 62; heart diseases, 39; Bright's disease, 38; acute intestinal diseases, 30; violence including suicide, 28, and bronchitis, 26. Scarlet fever caused 9 deaths; whooping cough, 2; measles, 1, and diphtheria, 9.

INDIAN TERRITORY.

Hospital Established.—The Wilburton Emergency Hospital has been established by Drs. U. A. D. Collelmo, W. H. Horine and Arthur L. Anderson.

Orders Vaccination.—The Muskogee Board of Health has ordered that all school children who can not produce certificates of recent vaccination must be vaccinated.

License Revoked.—The medical board of the southern district recently revoked the license of Dr. R. W. Freeman, Chickasha, on the ground of dishonorable and unprofessional conduct. Dr. Freeman secured a writ of supersedeas and ha now brought suit for damages aggregating about $13,000 against fellow practitioners, who he alleged were responsible for the charges which led to the revocation of his license.

Society Meetings.—The Muskogee Medical Society, at its meeting January 16, adopted a resolution that all regular physicians should take their professional cards from the daily papers and should refrain as much as possible from newspaper publicity.——The Medical Clinical Society met at Durant, February 13, and elected the following officers: President, Dr. A. S. Hagood, Sterrett; vice-presidents, Drs. G. M. Rushing, Durant, and W. M. Armstrong, Mead; secretary, Dr. J. A. Humphrey, Durant, and treasurer, Dr. H. W. Yates, Bokshito.

INDIANA.

Epidemic Diseases.—Several hundred cases of whooping cough are reported from Princeton.——At Argos, north of Rochester, 172 cases of measles have been reported, with three deaths.

License Revoked.—On the allegation that she has been guilty of criminal practice, the State Board of Medical Registration and Examinations on March 12 revoked the license of Dr. Mary A. Whery, Fort Wayne.

Goshen to Have Hospital.—The Goshen Medical Society met wth Dr. Irvin J. Becknell, March 9, to discuss plans for a city hospital. About $25,000 will be required for this purpose, $5,000 of which has been bequeathed by a woman of Denver.

Acquitted.—The jury in the case of Dr. William H. Dings, Mitchell, charged with performing an illegal operation on Carrie Shaw at Mitchell in September, 1904, as a result of which the woman died, returned a verdict of acquittal, February 28.

Newcastle Gets Epileptic Village.—It has been decided that the state epileptic village shall be located in Henry County, near Newcastle. Forty-two towns in the state were applicants for the location. The state paid $122,882 for the site, or $100 an acre.

Condemns Criminal Practices.—The Delaware County Medical Society on March 2 passed a resolution calling on the State Board of Medical Registration and Examinations to bar from the practice of medicine all practitioners in the state convicted of criminal practices.

Ross Again in Trouble.—Dr. Nelson B. Ross, Muncie, whose license to practice was revoked on account of gross immorality, was arrested and taken to Newcastle, February 18, on account of an alleged connection with the death of Miss Ethel Hart, Springport, from an illegal operation.

Physicians Banqueted.—A banquet was given by the physicians of Terre Haute, March 6, in honor of the fifty-fifth anniversary of the doctorate of Dr. Stephen J. Young.——A banquet was given by the faculty of the Indiana Medical College, March 1, in honor of Dr. Henry Jameson, dean of the faculty. Dr. John H. Oliver officiated as toastmaster.

Smallpox.—From 15 to 20 cases of smallpox have been reported on the west side of Michigan City.——About 20 cases have been reported at English, Crawfords County, and the March term of court, which was to have convened at that place March 12, has been postponed.——Epidemics of smallpox are reported in Miami and Fulton counties.

Personal.—Dr. Volney S. Cheney has resigned as health officer of Bluffton.——Dr. J. B. Seaman, Osceola, who was recently injured in a collision with a street car in South Bend, is improving.——Dr. David S. Linville, Columbia City, is seriously ill.——Dr. William A. Eshelman, secretary of the Anderson board of health, has resigned to accept a position as medical examiner for the Pennsylvania System.

Society Meetings.—Floyd County Medical Society met at New Albany, March 1, and elected the following officers: President, Dr. George H. Cannon; vice-president, Dr. Walter J. Leach; secretary and treasurer, Dr. Dumont Garey; delegate to the State Medical Society, Dr. Elihu P. Easley, and alternate, Dr. J. F. Weathers, all of New Albany.——Physicians of Summitville have organized a physicians' club, with the following officers: President, Dr. Winser Austin; vice-president, Dr. Audley V. Fankboner, and secretary and treasurer, Dr. Etta Charles.

IOWA.

Pure-Food Law.—The legislature has passed a law providing for an annual appropriation of $10,000 for a pure-food laboratory and other necessary expenses.

Itinerant Physicians.—There are fifteen physicians in the state practicing as itinerants. A list of these is given in the March number of the Iowa *Health Bulletin.*

Mahaska County Medical Society.—At the meeting of the Mahaska County Medical Society, March 13, papers were read by Drs. H. C. Homer, J. G. Roberts and D. C. Brockman. In the evening Prof. Henry Albert, state bacteriologist, gave an illustrated lecture on "Bacteria and Disease," to which the public was invited.

Medical Legislators.—The following are the physician members of the Thirty-first General Assembly, now in session: In the Senate, Dr. Henry Young, Manson; in the House of Representatives, Drs. Mark A. Dashiell, Indianola; Ross H. Gregory, Nevinville; Louis J. Leech, West Branch; George McCulloch, Humeston; L. F. Summers, Milton, and Elbert W. Clark, Grinnell.

Practicing Without License.—A. J. Kendig, Winterset, was tried and convicted in Madison County for practicing medicine without having procured the required certificate.——B. F. Miller, an alleged drugless healer of some denomination, has been indicted by the grand jury of Black Hawk County for violating the medical practice law.——The following persons were indicted by the Page County grand jury for practicing

medicine without a certificate: John E. Swanson, Essex; D. W. Humphrey, Shenandoah; John L. Cox, late of Braddyville, and Mrs. Thielen of Clarinda.

Tuberculosis in Iowa.—The board of control of state institutions has just submitted to the legislature its report on the extent of tuberculosis in Iowa and the best means of prevention and treatment of the disease. The report consists of a fifty-page volume and contains considerable interesting information. According to the report there were during the year ending June 30, 1904, 4,569 cases of tuberculosis in the state, as reported by 2,436 out of the 3,532 physicians of the state, no reports having been received from 1,096 physicians in response to blanks sent out by the board of control. Of the 2,436 physicians who reported cases 1,039 had no cases to report. There is no doubt but that there are more than 4,569 cases of tuberculosis in the state. That figure probably represents two-thirds of the total number, if we consider that the physicians who had no report had just as many cases as those who did report. Of the 4,569 cases reported 3,725 were of the pulmonary type and 844 were cases of tuberculosis in other organs. Women are more frequently affected than men, as shown by the figures that 2,611 of the cases were females and 1,877 were males. The following age reports are also of significance: From 1 to 10 years, 332 cases; from 10 to 20, 685; from 20 to 30, 1,586; from 30 to 40, 1,076; from 40 to 50, 435; from 50 to 60, 266; from 60 to 70, 161; from 70 to 80, 50; over 80 years of age, 5 It will, therefore, be seen that the vast majority of the cases are in persons from 20 to 40 years of age, very few below 10 years of age, and very few above 60 years of age. The occupation of the tuberculous individuals is also given. It states that there are 10 physicians who have tuberculosis. The report also gives the results that have been obtained by different methods of treatment in various parts of the world and ends with the following conclusions: 1, There are at least 7,000, probably 7,500 cases of tuberculosis in Iowa; 2, that the best means of preventing the spread of the disease is by informing the people regarding the dangers of tuberculosis, the reporting of all cases, prohibiting expectoration in public places, and the removal of consumptives to sanatoria.

KANSAS.

New Hospital.—A new hospital is to be erected at Independence to contain 25 rooms and to cost about $10,000.

Orders Fumigation of Street Cars.—The city board of health of Topeka has issued an order requiring the Topeka Railway to fumigate its street cars at least once a month.

Diphtheria Prevalent.—During the month of February there were 220 cases of diphtheria and 29 deaths, as compared with 55 cases and 10 deaths for the corresponding period of 1903.

Smallpox.—Four cases of smallpox have developed among the convicts from Kansas and Oklahoma confined in the state penitentiary at Lansing. The prison has been placed under strict quarantine; no convicts will be received or discharged, and no guards will be permitted to leave the prison until the quarantine is raised. More than 1,000 of the convicts have been vaccinated.

MARYLAND.

Baltimore.

Health Report.—Five cases of smallpox were reported during the week ended March 17. Diseases due to cold and wet were in the majority. The deaths from pneumonia were 37; from consumption, 32; from bronchitis, 7; from influenza and whooping cough, each 5.

Personal.—Among those who will go abroad this summer are Drs. Randolph Winslow, J. Mason Hundley and Frederick Dobyns.——Dr. Ira Remsen, president of the Johns Hopkins University, is in California this week, attending a meeting of the American Universities, held under the joint auspices of Leland Stanford and California universities at San Francisco, March 14 to 17.——Dr. Thomas S. Cullen sailed on March 14 for a trip of several months through Europe.——Dr. William A. Parvis is recuperating his health at Mount Jackson, Va., and will leave for Colorado June 15.——Dr. Summerfield B. Bond has been appointed chief medical examiner of the Baltimore & Ohio Railroad.——Dr. Harry D. Purdum has resigned from the resident staff of the University Hospital to accept a position in a Michigan insane hospital.

Tuberculosis Bills.—There are now two bills before the legislature for a tuberculosis sanitarium, one asking an appropriation of $100,000, the other of $25,000. The former contemplates a state institution, the latter simply an appendage to the present Endowood Consumptive Hospital. It is claimed by advocates of the second bill that contributions can hereafter only be secured for the proposed institution by its remaining private, and that, in fact, a large amount has already been secured. The state bill, however, has the backing of the profession and was urged at Annapolis, March 13, by Drs. Welch, Thayer, Finney, Fulton, Hocking and others. While advocating the state institution these gentlemen, however, are not opposed to the appropriation also asked for the Endowood institution, over which Dr. Henry Barton Jacobs presides and in which he is specially interested.

MISSOURI.

Hospital Opened.—The Sisters of Mercy at Springfield, Mo., opened to the public on February 22 the new St. John's Hospital, recently erected at a cost of $50,000.

Accident.—Dr. R. Wood Brown, Kansas City, sustained a fracture of the left leg in a fall from a street car, January 24, and lay in the street for more than four hours before help was rendered him.

St. Louis Urological Society.—This society was organized March 16 with twelve charter members. Dr. Bransford Lewis was elected president, and Dr. Eugene A. Scharff, secretary and treasurer.

Fined for Illegal Practice.—Dr. R. D. Haley, an advertising specialist, and his assistant, C. W. Laybourn, St. Louis, were each fined $500 for practicing medicine without a license, February 28. They both gave notice of appeal.

Goes to Prison Unguarded.—Dr. Joseph D. Todd, Richards, was sentenced to imprisonment for twelve years for the murder of Robert Wall and appealed, being released on bail. When the decision of the lower court was affirmed by the Supreme Court, March 6, he went to the penitentiary and reported to the warden to begin serving his sentence.

Personal.—Drs. Augustus C. Bernays, George W. Cale, Jr., Willard Bartlett and John M. Dean have gone to Rochester, Minn., for a week.——Dr. and Mrs. Jefferson D. Griffith, Kansas City, sailed for Europe, February 8.——Dr. Charles M. Johnson, St. Charles, celebrated his eightieth birthday January 28, and his golden wedding anniversary on February 26.

NEW YORK.

The Epidemic at Yonkers.—The epidemic of tonsillitis in this city continues unabated and hundreds of people are confined to their homes.

Brooklyn's Water Supply.—Bills have been introduced into the legislature repealing the laws of last year prohibiting New York City from going to Long Island for a water supply, and giving Brooklyn permission to get water from Suffolk and Nassau counties.

Oppose Osteopathy Bill.—The State Department of Education has issued a formal statement to the members of the legislature declaring that, contrary to widely circulated reports, the department was opposed to the pending bill to secure legal recognition for the practice of osteopathy in the state. They assert that the state should not recognize any school of practice in medicine any more than any special creed or cult.

Personal.—Dr. F. Park Lewis, Buffalo, will spend the summer in Europe.——Dr. Roswell Park, Buffalo, has resumed his work after his severe illness.——Drs. Harvey Gaylord and G. Clowes of the New York State Cancer Laboratory, Buffalo, have sailed for Jamaica.——Dr. Burt C. Johnson, Buffalo, has gone to Europe.——Dr. William Mabon has been appointed superintendent of the Manhattan State Hospital, Ward's Island.

Osteopathic Legislation.—The osteopaths have again begun a campaign for medical license from the state. At a recent hearing at Albany Mr. M. W. Littleton spoke before the committee of the Assembly and the Senate. The medical profession was well represented in opposition to this bill. Last year the committee rejected the bill, and it is sincerely hoped that a similar fate awaits it this session.——Assemblyman Cox has introduced a new osteopathic bill which provides for a separate board of examiners and a three-year graded course.

Milk Decision Affirmed.—The validity of the law of the state prohibiting the vending of milk containing less than 12 per cent. of milk solids was argued before the Supreme Court of the United States in the case of Frederick St. John, a Buffalo milk dealer who was arrested for violating the law. The Supreme Court of New York affirmed his conviction and the constitutionality of the law, denying his plea that it deprived him of the equal protection of the law guaranteed by the federal Constitution. St. John's complaint was that the trial jus-

tice refused to allow him to prove that the milk he sold was in the same condition that it came from the cows and had not been adulterated, thus depriving him of the chance to prove his innocence.

Society Celebrates Centennial.—The Medical Society of the County of Rensselaer celebrated the one hundredth anniversary of its organization at Troy, February 22, with a banquet at which 125 members and guests were present. Dr. C. Howard Travell, the president, officiated as toastmaster, and addresses were made by Corporation Counsel George P. Wellington, who spoke on "Scientific Politics"; Dr. William M. Polk, New York City, who responded to the toast of "The Physician and the Layman"; County Judge Michael E. Tierney, who spoke of "The Physician in Law"; Prof. William D. Mason of the Rensselaer Polytechnic Institute, who responded to the toast "Professional Education," and Dr. R. Brockway, Bontecou, the Nestor of the society, who gave an exhaustive résumé of the growth and development of the organization.

Sea Side Hospital and Convalescent Home.—Assemblyman Tompkins has a bill before the legislature which creates a commission for the purchase of a stretch of ocean front on Long Island to be converted into a free park and convalescent home. This measure was first proposed by Mayor McClellan of New York in a message to the board of aldermen, in which he said: "Provision must soon be made by the city toward securing fresh air homes for children and convalescent patients from the city hospitals as well as breathing spaces for the whole people." It is proposed to set aside $2,500,000 for this excellent project. Anticipating the passage of the bill sites have been discussed and suggested at Long Branch, Coney Island and Rockaway Beach. This building of hospitals and convalescent homes by the sea though apparently a modern idea is ancient, for in antiquity they built temples to Æsculapius near the sea side, and many great and ancient institutions of medical renown were situated on the sea side. This is particularly true of the great school of Sahrno, one of whose teachers, a woman, Tratula, wrote a treatise on the value of sea baths.

New York City.

Ball for Hospital.—Beth Israel Hospital's annual Purim ball was held March 14, when $10,000 was realized for this hospital.

Hospitals Crowded.—It has become necessary to set apart two wards of Bellevue Hospital for tuberculosis patients, as there is room for no more tuberculosis patients at Blackwell's Island. As a result of this action the medical wards of Bellevue are somewhat overcrowded.

Health Department After Fur Dealers.—Notices have been served on dealers in raw furs in the business district that they must ventilate their work rooms from the top or stop dealing in "green" furs. The department insists that they shall ventilate through the roofs and then apply for a permit to do business as the law requires.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended March 10, 2,384 cases of measles, with 55 deaths; 436 cases of diphtheria, with 62 deaths; 414 cases of tuberculosis, with 187 deaths; 250 cases of scarlet fever, with 13 deaths; 30 cases of cerebrospinal meningitis, with 25 deaths; 17 cases of typhoid fever, with 3 deaths, and 171 cases of varicella, making a total of 3,702 cases, with 345 deaths.

Street Cleaning and Pure Food.—A resolution for the issuance of special revenue bonds to the amount of $25,000 for the special investigation of the street cleaning department was adopted at the last meeting of the board of aldermen. A resolution was also adopted urging the legislature to grant Dr. Darlington an appropriation for the investigation of the purity and healthfulness of foods, wines and beverages manufactured and sold in this state.

Concealed Measles.—Health inspectors in the Bronx have discovered that no less than 50 cases of measles in well-to-do families were not reported by the attending physician, and in cases where no physician was summoned mothers and nurses were charged with willful neglect. These cases were all located in the neighborhood of the Bedford Park school and have had such an effect on the attendance that the school may have to be closed. Several children attended school while affected with the disease, and the health department has ordered a thorough investigation.

Homes for Medical Students.—The woman's advisory board of the Students' Club, the intercollegiate branch of the Young Men's Christian Association, is endeavoring to enlarge the work that it is conducting for medical students. John H. McCracken stated that there were not as many medical students in New York as there were twenty years ago, owing to the lack of accommodation, and that if there was one class of men neglected more than another it was the medical students. It was right that more attenti n should be given to the housing of medical students and efforts would be made to enlarge the home so that forty men could be accommodated. The board has $2,000 toward furnishing the new home.

Transfer of Dying Patients.—The practice of transferring dying patients from one hospital to another for the purpose of keeping down death rates has been criticised from time to time, and several deaths that have occurred recently have brought this matter to the attention of the coroners, who have framed the following resolutions:

Resolved, That this is in violation of all principles of justice and humanity, and meets with our disapproval; that we not only object but protest, and ask that all persons in charge of hospitals take measures at once and instruct the physicians in charge of patients not to remove them to other hospitals when conditions are such as to endanger the lives of the patients; and it is further

Resolved, That if this matter is disregarded this board will take stringent measures to bring the violator to justice.

NORTH CAROLINA.

State Society Meeting.—The Medical Society of the State of North Carolina will hold its fifty-third annual session in Charlotte, May 29, 30 and 31. The State Moard of Medical Examiners will meet in the same city May 24.

Hospital News.—Mercy General Hospital, Charlotte, was informally opened and dedicated February 26.——Two Philadelphia surgeons have purchased the old military school building at Rutherfordton and will erect a hospital and sanitarium to cost $25,000.

January Deaths.—During January 222 deaths were reported, equivalent to an annual mortality of 17.1 per 1,000. Pneumonia caused 44 deaths, consumption, 23; heart disease, 16; brain diseases and diarrheal diseases, each 14; nervous diseases, 10, and accidents and violence, 9.

Personal.—Dr. James S. Lafferty, Concord, has removed to Greensboro.——Dr. Peter E. Hines, Raleigh, is critically ill with cerebral hemorrhage at his home.——Drs. Ginnada T. Sykes, Grissom, and Erwin Q. R. Houston, Davidson, recently suffered severe losses by the burning of their residences.——Dr. Hubert A. Royster, Raleigh, has retired from general practice and now devotes himself exclusively to surgery and gynecology.——Dr. Richard H. Lewis, Raleigh, has been elected president, and Dr. Chase P. Ambler, Asheville, a member of the executive committee, of the Audubon Society of North Carolina.——Dr. McTyeire G. Anders, Connolly Springs, has located in Gastonia.

The Matthews Case.—Dr. Joseph B. Matthews, Greensboro, who was held after a preliminary hearing before a magistrate for trial at the next session of the Guilford Superior Court on the charge of having murdered his wife, was found guilty and sentenced to imprisonment for twenty years. The evidence was of a most serious nature. Three physicians who were called into the case found Mrs. Matthews in a dying condition from an excess of morphin, and it was with great difficulty and prolonged efforts they succeeded in reviving her. Constant efforts were made during the day by Dr. Matthews to get the physicians out of the room on various pretexts. Finally in the afternoon he succeeded, and returning after a short absence, two of the physicians discovered Dr. Matthews injecting a concentrated solution of strychnin into his wife's body. Her death ensued shortly after with the characteristic symptoms of strychnin poisoning.

NORTH DAKOTA.

Personal.—Dr. D. Tufte, Fargo, has returned after six months in Europe.——Dr. J. Dempster Taylor, Minot, has been re-elected physician of Ward County.

New Hospitals.—The new hospital for the insane at Jamestown has just been completed at a cost of $60,000.——The Lutheran Hospital Association has decided to erect a hospital at Rugby, to cost about $30,000.

Births and Deaths of 1905.—The secretary of the State Board of Health reports that during 1905, 4,912 births were reported to the board and only 1,747 deaths. Of the latter 479 were due to communicable diseases.

Agreement Regarding Insurance Examinations.—Physicians registered and practicing in the sixth councilor district, believing that the duties of insurance medical examiners require a high degree of professional skill, absolute integrity and special attention to the interests of the insurance companies, have pledged themselves to exercise skill and care in all examina-

tions and to make no discrimination in examinations or fees to different companies. They agree to be governed by the following schedule of fees: $5 for each ordinary examination, including urinalysis; $10 for each examination where microscopic examination of urine, sputum or other secretion is required, and $3 for each certificate of health for renewal of lapsed policy. This agreement has been signed by all the physicians in Burleigh and Kidder counties, and copies have been sent for signature to the physicians in the other counties in the sixth judicial district.

OHIO.

Hospital Needed.—Middletown is in urgent need of a hospital, and Dr. David B. Bundy has offered $1,500 toward the establishment of such an institution.

Dr. Haugh Found Guilty.—Dr. Oliver C. Haugh, Dayton, charged with the murder of his father, mother and brother, was found guilty, March 9, of murder in the first degree.

Injured and Ill.—Dr. James W. Ward, Lytle, suffered a serious injury to one of his eyes a few days ago.——Dr. Addison K. Kirkpatrick, Eckmansville, has been taken to Cincinnati, where he will undergo a surgical operation.

Hospital Patients in Peril.—The Cleveland Homeopathic Medical College was practically destroyed by fire March 9, and the Huron Road Hospital, with its 63 patients, was placed in grave jeopardy thereby. Fortunately a panic was prevented, but one patient died from shock.

White Hospital Report.—The annual report of the White Hospital, Ravenna, for the year ended Jan. 1, 1906, shows that 182 surgical cases, 103 medical cases, and 23 obstetrical cases were received during the year. Six patients were moribund on admission and, including these, there were 13 deaths during the year.

A Frank Confession.—Health Officer Allen of Cincinnati has received the following naive letter from a delinquent dairyman: "I have investigated, and find that my night men, instead of putting filtered water into the milk, used hydrant water. You see, I have been putting one gallon of water into every can of milk because the cows give so little milk now and it is so rich."

Personal.—Dr. William S. Bond, Hubbard, is recovering from an attack of pneumonia.——Dr. Daniel A. Berndt, Portsmouth, has been appointed assistant surgeon of the Norfolk & Western Railway.——Dr. Harry R. Geyer has been appointed workhouse physician of Zanesvile, vice Dr. Herbert J. Sheppard, resigned.——Dr. Harrie B. Martin, Springfield, has returned after two years abroad.——Dr. Rufus D. Jacobs, Vinton, who has been seriously all, is improving.

PENNSYLVANIA.

Smallpox at Bethlehem.—A case of smallpox was reported in South Bethlehem, March 11. The victim was a Russian immigrant, who landed in New York twelve days before. It is stated that she was allowed to land by the United States quarantine officials in New York, although she had no marks indicating previous vaccination.

Free Hospital for Poor Consumptives.—The report of the Free Hospital for Consumptives, White Haven, for the year ended March 1, shows that 540 patients were treated in the institution. There were but 2 deaths, one of these an employé of the institution and the other a female patient about to be discharged, both deaths being due to pneumonia. There were 114 patients in the sanatorium March 1, 1905, and 426 patients were admitted during the year. The patients discharged during the year numbered 268, while those leaving numbered 134. On February 28, 133 persons remained at the sanatorium. Of the total number of patients treated the report states that in 142 the disease was arrested; in 85 the condition was greatly improved; 83 were reported improved, and 76 not improved. During the year 165,820 quarts of milk were used, and 281,766 eggs, at a cost of $7,192.64 for milk and $5,765.51 for eggs. The receipts for the year were $73,587.03, and expenditures, $73,585.72.

Philadelphia.

Announcement.—At the March 28 meeting of the Philadelphia County Medical Society a symposium on sanitary and moral prophylaxis will be held, and the educational movement for the prevention of venereal disease will be fully considered. The meeting will be addressed by Dr. Prince A. Morrow of New York City.

Smallpox Appears.—One case of smallpox was reported during the week in a colored child. This is the first case of this disease reported for fifteen months, and every effort is being made by the authorities to prevent the spread of the disease. All the houses in the immediate neighborhood were quarantined and fumigated.

Personal.—Dr. George W. McCafferty has been appointed to succeed the late Dr. David D. Richardson as resident physician of the State Hospital for the Insane, Norristown.——Dr. Clarence A. Veasey has returned from a visit to southern California.——The report that Dr. J. C. McCracken, who represents the University of Pennsylvania in China, was injured in the recent riots, is unfounded.

Examinations for Interneships.—The following hospitals have announced the dates of their examinations for resident physicians: St. Joseph's Hospital, Philadelphia, May 1, six vacancies to be filled; term of service, sixteen months. Methodist Episcopal Hospital, Philadelphia, April 12, and Allegheny General Hospital, simultaneously in Philadelphia, Pittsburg and Ann Arbor, Mich., April 7, at 9 a. m.

Addresses.—Dr. Richard Hunt, Washington, D. C., addressed the Pathological Society of Philadelphia, March 22, on "Studies in Metabolism in Relation to Alcoholism."——Dr. Casey A. Wood, Chicago, addressed the Section on Ophthalmology of the College of Physicians, March 20, on "Some Forms of Hereditary Cataract."——Dr. Philip P. Calvert addresed the Fortnightly Club of Mount Holly, N. J., March 12, on "Historical Sketch of the Discovery of the Deep Sea Animals."

Medical Staff of Widener Memorial.—The medical staff of the Widener Memorial Home for Crippled Children, which was formally opened March 3, will be composed of the following men: Surgeon-in-charge Dr. DeForest Willard; assistant surgeon, Dr. Edward B. Hodge, Jr.; visiting physician, Dr. Albert D. Ferguson; pediatrist, Dr. Alfred Hand, Jr.; neurologist, Dr. William G. Spiller; ophthalmologist, Dr. G. Oram Ring; assistant ophthalmologist, Dr. Carl S. Williams; laryngologist, Dr. Francis R. Packard; dermatologist, Dr. Jay F. Schamberg, and pathologist, Dr. Robert L. Pitfield.

Medical Visits to Schools.—The report of the work of the assistant medical inspectors in the bureau of health during February shows that 5,985 visits were made to the public schools, in which 19,818 pupils were examined. There were 1,064 pupils excluded from school on account of illness, 553 of whom were girls and 511 boys. Of the number excluded 245 were suffering from measles and 118 from measles contact; 16 from diphtheria and 9 from diphtheria contact; 6 from scarlet fever and 6 from scarlet fever contact; 42 from chickenpox; 35 from acute conjunctivitis; 32 from ringworm; 100 from mumps, and 2 from erysipelas. The inspectors performed 121 vaccinations and, in addition, reported 3,143 children to their parents as being in need of medical attention.

Health Report.—The total number of deaths reported for the week reached 591, as compared with 633 reported last week, and 589 reported in the corresponding period of last year. The principal causes of death were: Typhoid fever, 26; measles, 19; scarlet fever, 3; whooping cough, 4; diphtheria, 16; meningitis, 2; consumption, 70; cancer, 25; apoplexy, 20; heart disease, 54; acute respiratory disease, 96; enteritis, 34; appendicitis, 5; Bright's disease, 43; puerperal sepsis, 5; suicide, 5; accidents, 16, and marasmus, 4. There were 448 cases of contagious disease reported, with 48 deaths, as compared with 357 cases and 46 deaths in the previous week. The number of contagious disease cases reported shows, therefore, a large increase over the previous week, particularly in diphtheria and typhoid fever, 117 cases of the former and 287 of the latter being reported, as compared with 77 cases of diphtheria and 231 cases of typhoid in the previous week.

Money for Charity.—At the meeting of the executive committee of the twenty-sixth annual charity ball the treasurer was authorized to distribute $2,350 to each of the following beneficiaries: Hospital of the University of Pennsylvania, Jefferson Medical College Hospital, Howard Hospital and St. Timothy's Hospital.——By the will of the late Edward T. Dobbins the following institutions are named as beneficiaries: Women's Medical College Hospital, to endow a free bed, $3,000; Women's Medical College, to pay tuition for the regular course of instruction in medicine of a young woman who can pass the necessary examination, preference being given to a graduate trained nurse, $3,000; Burlington County Hospital, $5,000; Philadelphia Home for Incurables, $5,000; to maintain a scholarship at the Philadelphia College of Pharmacy, to be conferred on a New Jersey apprentice passing the highest preliminary examination, $2,500; Christ Church Hospital, $10,000, and Hospital of the Women's Medical College,

$10,000.——As a result of an autograph auction book sale held at the Germantown Cricket Club $800 was realized, which is to be donated to the Germantown Hospital.

GENERAL.

Gastro-Enterologists to Meet at Boston.—The ninth annual meeting of the American Gastro-Enterological Association will be held at Boston, June 4 and 5, 1906. The president's address, "The Mutual Obligations of the Surgeons and Internists in the Proper Development of Gastric Surgery," will be by Dr. H. W. Bettmann, Cincinnati.

Prevention of Yellow Fever.—In response to the request of a number of citizens of New Orleans, six surgeons of the Public Health and Marine-Hospital Service have been assigned to visit the parishes adjacent to that city to assist the state authorities in such measures as may be necessary to prevent a recurrence of yellow fever during the coming summer.

Cholera in the Philippines.—Dr. Heiser, chief quarantine officer at Manila, states in *Public Health Reports* that there is a gradual increase in the number of cases of cholera reported from the provinces. Many cases of the disease are occurring among the fishermen and others who are employed on the small craft which ply between the upper end of Manila Bay and the numerous rivers which lead into it from Bulacan and Pampanga provinces. The infected territory is lowland and marshy. The villages are built along the banks of the rivers on insanitary sites. If there is any considerable increase in the number of cases, the direct drainage into the rivers will no doubt soon infect them and then a more serious epidemic is to be expected. The eradication of the disease will be exceedingly difficult, and under the most favorable circumstances a number of months will probably elapse before the disease can be checked in these provinces.

Quarantine Regulations for Fruit Vessels.—Strict regulations are to be enforced regarding fruit vessels at foreign ports suspected of being infected with yellow fever. The captain or his representative is to be the only person allowed to land, and that only to enter and to clear the vessel, and then only in the daytime. No one from the shore is to be allowed to board the vessel, except customs officers and the agent of the ship. Fruit intended for shipment on vessels lying at docks is to be graded and payment made for it on shore or at the dock. Passengers must embark at the regular ports and must have been under observation by a United States sanitary inspector for at least five days prior to the departure of the ship. The vessel must not lie where the crew will be exposed to the danger of contracting yellow fever, and at ports where the vessels lie at wharves the vessel must be moved into the stream or at least 200 meters from the wharf before sunset, and not returned to the wharf before sunrise the following day, except at ports where previous permission has been obtained. Water tanks, water buckets and other collections of water about the vessels are to be guarded in such manner that they shall not become breeding places for mosquitoes. The destruction of mosquitoes aboard must be insured as far as possible by the simultaneous fumigation—two pounds of sulphur per 1,000 cubic feet, all openings closed for two hours—of all compartments which can be so treated without injury to the cargo. Pyrethrum powder may be substituted in the engine room at the option of the medical officer. The vessel is to sail immediately after this fumigation is completed. All baggage is to be rigidly inspected and the exclusion of mosquitoes assured. Fruit vessels plying between United States ports and fruit ports where yellow fever is known to exist will not be admitted to entry under the provisions of these special regulations until they have been not less than five days from the port of departure before being admitted to pratique at the quarantine station at the port of arrival. Fruit vessels without certificates of the United States sanitary inspectors at foreign ports and fruit vessels infected with yellow fever will be subject to the general quarantine regulations of the United States. Persons exposed to infection in unloading cargoes on to lighters shall be detained after such exposure, as provided for other persons exposed to yellow fever. Any officer of a fruit vessel detected in evading or violating these special regulations shall forfeit, for any vessel on which he may subsequently be found, or be engaged, any participation in the special privileges accorded by these regulations. Fruit vessels trading with any ports infected with yellow fever must carry a competent, qualified physician. Fruit vessels arriving with yellow fever on board, or having had yellow fever on board during the voyage will be quarantined. The personnel shall be removed, with the exception of the master, the living apartments thoroughly disinfected, the vessel provided with a new crew, sufficient to care for her, and towed to the docks for the discharge of cargo. On completion of the discharge of cargo the holds are to be fumigated with sulphur and the vessel towed to the quarantine station to take on her crew before proceeding to sea.

FOREIGN.

Immunity of Lime Workers to Tuberculosis.—We are informed that a communication signed by more than a thousand physicians is to be presented at the approaching International Medical Congress on the subject of "Immunity to Tuberculosis of Workers in Lime and Gypsum Kilns." The *Siglo Medico* publishes an appeal for all physicians who have any experience in the matter to inform those getting up the article. Address Dr. G. Fisac, provincia de Ciudad Real, Daimiel, Spain.

Moritz Steinschneider.—The international journal devoted to the history of medicine and medical geography, *Janus*, in its issue for February, pays homage to the oriental student, Moritz Steinschneider, who reached the age of 90 March 30, 1906. He is still actively engaged as occasional assistant at the Berlin Royal Library. His researches on the pharmacology, toxicology, medicine and natural sciences of the Arabian and other writers during and just preceding the Middle Ages will be a mine of information for generations of scientists yet unborn.

Smallpox in India.—The epidemic of smallpox which began in Calcutta in December shows no signs of abatement. It is impossible to determine accurately the number of cases or deaths, as they are rarely reported to the health department. Hindoos of all classes are averse to hospital treatment of every kind, and they dislike to have any disinfecting operations carried on in their houses. They also look on smallpox as a very ordinary visitation. Because of these facts they not only do not report cases, but conceal them. It is estimated that there have been about 5,500 cases since December.

Medical Boycott in Italy.—Under the heading "Boicottaggio del Comune di Lentini," the *Gazz. degli Ospedali* for March 1 publishes an appeal from the president of the National Association of District Physicians. He calls on the presidents of the various local medical associations and the members to stand by Dr. L. Piazza, until recently district physician in the commune of Lentini. He has always conducted himself with honor and professional devotion, and his abrupt dismissal by the local authorities was an undeserved insult. The commune is now without a district physician, and it is proposed to boycott it until Dr. Piazza is restored to his position or reparation offered.

Recrudescence of Plague in Brazil.—Recently 11 fatal cases of plague have been reported in Bahia. The number of other cases is not stated. The outbreak appears to be a recrudescence and not new cases introduced from Rio de Janeiro or other Brazilian ports. During the week ending January 21, 2 deaths from bubonic plague were reported in the city of São Paulo. These cases appear to have occurred in individuals arriving there from other ports; one of these patients had lately been in the city of Rio. During the last three years sporadic cases have from time to time made their appearance in that city, but there has never been anything pointing to any infection of the city itself.

Medical Institutions Founded as Anniversary Presents.—As already mentioned, the emperor and empress of Germany announced some time ago that on the occasion of their silver wedding they would prefer not to have personal gifts made to them, but rather to have the occasion celebrated by endowments of charitable and medical institutions. Thirty cities have announced their intention of founding various institutions, representing a total expenditure of more than $600,000. The list includes homes for convalescents, for infants, means to reduce infant mortality, hospitals for the blind asylums, sanatoria, etc. Several of the institutions are to be endowed by private individuals. Berlin has appropriated funds for a sanatorium for lung affections, for the model infant asylum, for a maternity, and for a "night nursery." The largest amount was given by Breslau—$90,000 to found an infant asylum.

New Journal of Applied Hygiene.—The first number of a new French monthly, *L'Hygiene Générale et Appliquée*, has been received. It has been founded by Chantemesse, professor of hygiene at Paris, chief of the national sanitary service. Its aim is to popularize hygienic measures and record their successful application. The first number opens with a sketch by Chantemesse of the late epidemic of yellow fever in New Orleans, and the lessons to be learned therefrom. The second

article describes the workings of the course in hygiene, entitling to a diploma, recently organized at Lyons. Forty-nine persons are taking the course, including a number of pharmacists, architects, chemists, and teachers, as well as physicians and medical students. Requests have already been received for an evening course of lectures for persons employed during the day. Other articles are on the "House Book," and other topics connected with hygiene. The editors urge the readers to send in reports of successful stamping out of epidemics or of eradication of insanitary conditions, and to ask questions on any subject in the line of sanitation or hygiene. Replies by experts will be published in the monthly. It is issued by O. Doin, Place de l'Odéon, Paris. The subscription is 12 francs, or about $2.40, including postage.

German Sleeping Sickness Commission to Africa.—The German government has appropriated about $30,000 for the expenses of a scientific commission to study sleeping sickness in Africa. Robert Koch is to head the party, which will include Drs. Beck and Kleine, his assistants on his former trips. His wife will accompany him as usual. The party sails from Naples April 16, and expects to be gone a year and a half. In an address delivered recently in Berlin Koch described the history and onward march of sleeping sickness in Africa, where it has been known since the beginning of the last century. At first confined to the west coast, it has now spread to the north shore of Lake Victoria Nyanza, and is threatening the German possessions. He remarked that nearly a quarter of a million people had probably died from the disease, whole villages having been thus depopulated; on certain islands he found that the inhabitants had died to the last person. No remedy is known for the disease; the main hope is to exterminate the insect in which the germ breeds. This might possibly be accomplished, he said, by burning the undergrowth in its haunts. It is only a few months since Koch returned from a scientific trip to Eastern Africa, bringing back several new data in regard to trypanosoma infection and other tropical affections, as was mentioned in these columns on page 1888 of the last volume. His illustrated communication on the subject was published in the *Deutsche Med. Wochft.* for Nov. 23, 1905, page 1865. A brief summary was given in these columns on page 236 of the current volume.

Official Postgraduate Instruction in Germany.—An imposing four-story building was dedicated in Berlin on March 1, which is unique in its design, its construction and its purposes. It owes its inception to the late Empress Frederick, who from her deathbed impressed on the authorities the importance of up-to-date training for practicing physicians. Within a year twenty-four local centers had been formed for postgraduate instruction, and more than a third of all the physicians of the realm had taken advantage of the courses offered. The importance of the mechanical arts for the development of medicine was being recognized more and more. The perfected microscope, the Roentgen equipment, etc., required technical skill of the physician in which he had not been trained. To meet these wants and centralize and economize efforts in this line, the building known as the "Kaiserin Friederich Haus" has been erected by popular subscription, costing about $400,000. The first floor is devoted to the permanent exhibition of medical and surgical instruments and appliances, medical electricity, optics and medical chemistry. On the next floor is a reading room, an assembly hall and a permanent exhibition of tropical medicine, models and other plastic reproductions for teaching purposes and more exhibits of optical and mechanical devices. The floor above is devoted to the exhibits which are to be loaned out to other postgraduate centers—traveling exhibitions. The upper floor contains lecture rooms and laboratories for clinical chemistry and microscopy, bacteriology and experimental therapy, and for Roentgen work and scientific photography in general. The reading room is to contain the medical journals of the world and a small collection of the latest manuals, atlases and illustrated compendiums. The assembly hall has 200 seats, with standing room for 40. Each seat has a small writing-table attachment, and the blackboards and tablets on the wall are arranged so that they can be raised or lowered instantaneously, leaving the calcimined wall free for the lantern views. The loan exhibits are not arranged for museum purposes, but any or all of the objects in them can be loaned to physicians, teachers, lecturers, etc., for instruction of the general public or special classes, as well as to physicians. Various persons, especially physicians, have donated the funds to equip certain parts of the establishment in which they are most interested. The funds contributed have not all been expended and remain as a permanent endowment. The state also aids in the support of the institution. The *Zeitschrift f. aerztliche Fortbildung*, of which Dr. R. Kutner is editor, is the official organ of the "Aerzliche Fortbildungswesen," as the entire postgraduate movement is called. Its editorial office has been removed to the new building, Berlin NW. 6, Luisenplatz 2-4. The issue for March 1 contains an illustrated description of the ceremonies attending the opening of the house, as part of the silver wedding celebration for the royal pair, with a view of the building and diagrams of the various floors. Sir Felix Semon represented Great Britain at the ceremonies, Blondel, France, and von Gross, Hungary.

LONDON LETTER.

The Duration of the Medical Curriculum.

An important report on the duration of the medical curriculum has been presented to the Royal College of Physicians by the Committee of Management of the Conjoint Examining Board in England, consisting of Dr. F. Taylor, chairman, Dr. Norman Moore, Dr. E. Living, Mr. J. Langton, Mr. E. Owen and Mr. R. J. Godlee. In 1890, the duration of the medical curriculum was extended from four to five years. It was hoped that the additional years would lead to more thorough study of practical subjects before the final examination. In the opinion of most teachers, however, this result has not been attained, for, owing to the greater demands on the student's time by the accessory scientific subjects, less time is devoted to practical subjects than formerly. It has been suggested that another year be added to the curriculum or that the student be required to pass the preliminary scientific examination in chemistry, physics and biology before commencing his five years' education at a medical school. The latter proposal, at the instance of the council of the Royal College of Surgeons, was referred to the committee of management of the conjoint board. The committee thought it desirable to ascertain the present length of the curriculum and how long it takes the average student to pass all his examinations. Analysis of the records of 400 students who obtained the diplomas of the conjoint board during the last two years shows that only 8.5 per cent. passed the final examination in five years and only 28 per cent. in less than six years; 71.5 per cent. took six years or more to pass and 34.5 per cent. took more than seven years. These figures are derived from a period when the regulations adopted by the Royal Colleges in June, 1904, had not come fully into operation. It is not improbable that under these new regulations a year may be added to the total period of study required before the final examinations. Probably the student will take from five and one-half to seven years in his medical education. This is a serious prospect for parents, and suggests that the present system is too much for the capacity of students. The committee of management of the conjoint board is of opinion, however, that any alteration in the present regulations is undesirable.

The Liverpool School of Tropical Medicine.

The report of the Liverpool School of Tropical Medicine again shows a record of much good work accomplished by this enterprising institution. A special research on trypanosomiasis was carried on in connection with the Congo expedition. This school has an advantage over the services of the staffs of the allied sciences, who are also working along this line in the Johnston laboratories, viz., the comparative pathology department, the veterinary school of the University of Liverpool, the bio-chemistry department and others. The Johnston laboratories of the University of Liverpool, where accommodation for the research work and teaching of the school is provided, were presented to the university by Mr. William Johnston. The buildings are on the east side of the celebrated Thompson-Yates laboratories which they adjoin. The are 90 feet long and 47 feet wide at their broadest part, and 34 feet wide at their narrowest. They contain four floors (connected by staircases and by an elevator), each devoted to separate departments of study and research, and under the control of various professors and lecturers. The basement is devoted to comparative pathology and is under the control of Dr. Annett. The ground floor is devoted to tropical medicine and is controlled by Professor Ross. The first floor is devoted to the study of experimental medicine, including experimental investigation in medicine, pathology, physiology, bacteriology and allied subjects, under the superintendence of the professors of physiology and pathology. One set of rooms is devoted exclusively to cancer research under the direction of Mr. J. E. S. Moore. The second floor is assigned to biochemistry, and is presided over by Prof. Benjamin Moore. The laboratories of tropical medicine occupy a room about

95 feet long and 35 feet broad. The main part of the room is devoted to students, but three chambers are partitioned off for the special use of individuals who wish to do research work in connection with tropical medicine and parasitology. There is accommodation for forty workers. The partitions of the room are fitted with cupboards, in which the museum of tropical diseases, which the school is now forming, is being arranged.

A Comparison of Fresh and Concentrated Infusions.

In order to determine whether concentrated infusions of drugs are, from a pharmaceutical standpoint as good as fresh infusions, Mr. E. H. Farr and Mr. R. Wright, examiners to the Pharmaceutical Society, prepared a series of official infusions and of corresponding concentrated infusions for purposes of comparison. Though they had a predilection for fresh infusions, they found that in the majority of cases the concentrated infusions were quite as representative of the drug. The concentrated infusions of broom, cloves, orange, and, to a less extent, buchu and roses, were inferior to fresh infusions. On the other hand, concentrated infusions of senna and valerian were superior to fresh infusions. In the case of buchu there is the difficulty that the drug contains volatile oil and mucilage, both of which are therapeutically valuable. An alcoholic preparation does not dissolve the mucilage; on the other hand, a certain amount of volatile oil accompanies the mucilage into solution in an aqueous infusion. It is satisfactory to know that concentrated infusions in general fully represent the drugs from which they are prepared; but as in many cases they can be prepared only by the use of alcohol, they can not be considered therapeutically as equivalent to fresh infusions.

The King's Sanatorium.

The King Edward VII Sanatorium for Consumption, probably the best-equipped institution of its kind in the world, has just been completed, fifteen months after the laying of the foundation stone. It is situated at Midhurst, Sussex, on the South Downs, and has cost $1,000,000. The architect, Mr. Percy Adams, worked in co-operation with Dr. Latham in designing the institution and visited various continental sanatoria. The situation is an ideal one. The sanatorium is 600 feet above the level of the sea, which is twelve miles away. To the north it is sheltered by pine woods. The grounds exceed 150 acres and around the building have been laid out as terrace gardens. The rooms are so constructed as to collect all the light possible and to afford no lodgment for dust. There is accommodation for 100 patients. The corridors are protected half-way up by spring doors at regular intervals, so as to allow of free ventilation but of no through draft. Each bedroom allows of 1,730 cubic feet of air per head. On each floor is a wide outside balcony facing the south for promenaders. All the walls have a sanitary surface, which is like porcelain but is not so cold as glazed tiling would be.

The Metropolitan Asylums Board.

The Metropolitan Asylums Board is one of the most remarkable institutions of its kind in the world. It controls all the fever hospitals of London as well as other institutions. The scope of the work embraces an area of twenty one square miles and a population of 4,648,950. Among the institutions controlled by it are fifteen hospitals for infectious diseases, six lunatic asylums and a land ambulance service with eight stations and 171 ambulance vehicles; a river ambulance service possessing three wharfs and five steamboats; the training ship *Exmouth* with infirmary on shore; a "shipping home" with accommodations for 60 boys; six homes for defective children; three seaside children's and seven other homes for children. In all, the board is responsible for forty-nine homes and hospitals. There are two recent additions—a home for convalescent fever patients and an asylum for imbeciles. The general expenditure for the year amounts to over $5,000,000. Over 5,000 persons are employed on the staffs of the institutions, and there are 7,000 inmates of the asylums and 8,000 patients at the hospitals.

The After-Care Association.

A useful institution exists in London, known as the "After-Care Association," the object of which is to help poor persons discharged from asylums for the insane. The annual meeting was held under the presidency of Sir Richard Douglas Powell. The report stated that the work of the association during the past year had been very encouraging. There were 288 cases before the council—176 women and 112 men. The number successfully helped was greater than in any previous year. The total receipts in 1905 were $5,000. The object of the association, the only one of its kind in the United Kingdom, is to enable people who had been in asylums to take up a useful part in life. This is done by grants in aid, by influencing the friends of the patients on their behalf, by providing cottage homes and by educating public opinion on a matter to which as yet little thought is given. The occupations open to these poor people are necessarily somewhat restricted, but they might be usefully engaged in horticultural and agricultural pursuits of a simple kind and in simple handicrafts.

The Medical Profession in 1906.

The number of physicians on the Medical Registrar in 1906 is 38,921, an increase of 545 on the number of 1905. The number on the London list is 6,438, against 6,397 in 1905; the provincial list for England gives 16,976 against 16,718 in 1905. In the overcrowded state of the profession it is satisfactory that the rate of increase of the profession has been diminishing in recent years and, according to the most recent statistics, appears to be less than the increase of the population. The population of England and Wales, according to the census of 1901, was 32,527,843. In the middle of 1905 the estimated population was 34,152,977, an increase of a little over 5 per cent. The increase in the number of physicians in the same period was 921, a little under 4 per cent. In London the rate of increase is considerably less than the rest of England, amounting to 2.3 per cent.

Action for Injuries Due to Treatment by the X-Rays.

A most interesting action has been tried in the courts for damages due to alleged negligent treatment with the *x*-rays. The defendants were a firm of chemists who were in the habit of administering the *x*-rays. The plaintiff was a solicitor's clerk who was suffering from locomotor ataxia and was gradually losing power in his legs. The use of the *x*-rays was advised by a physician, who sent the patient to these chemists, who were in the habit of administering the *x*-rays for him. The plaintiff alleged that his feet were placed so close to the bulb that it touched the soles and that they were deeply burned. For the defense expert evidence was given showing that it was impossible for the plaintiff to have received the injuries alleged. There were no burns on the abdomen or other parts of the body to which the rays were applied.

Identification by Teeth.

A remarkable case of identification by teeth has just occurred. Two colliers were charged with breaking into a store and stealing. It was found that some one had bitten a piece off the side of a cheese and left the marks of his teeth. Suspicion falling on the two men they were arrested, and one of them unwillingly allowed a cast of his mouth to be made, which was found exactly to fit the marks on the cheese. Expert evidence was given by a dentist, who stated that no two sets of teeth are identical. The prisoner showed much anxiety that his mouth should be examined to see if his teeth would fit the impression on the cheese, and when this was done it was found that since his arrest he had knocked out a stump. He was found guilty.

The Death Rate.

The quarterly return of the registrar general shows that the death rate in England and Wales during 1905 fell to 15.2 per 1,000, which was lower than in any previous year since the civil registration was established nearly seventy years ago. The death rate has been below 17 per 1,000 in each year of the present century, and during the quiquennium, 1901-5, the mean annual death rate has been but 16 per 1,000—a decrease of 1.7 on the rates of the preceding quiquennial periods. Since the period 1861-5 there has been a steady decline of the death rate from 22.4 to 17.7 in 1896-1900.

Death Under Chlorid of Ethyl in a Dentist's Chair.

The dangers of the recently introduced general anesthetic chlorid of ethyl are illustrated by the following case: A clergyman, aged 67, went to a dentist to have four teeth extracted. Chlorid of ethyl was administered to him by a physician, the brother of the dentist. An average quantity of the anesthetic (5 c.c.) is said to have been given, but whether or not exclusion of air was practiced is not stated in the report. When the fourth tooth was drawn the patient became very pale and died almost immediately.

New Departure in the Prevention and Treatment of Tuberculosis.

At the Brompton Hospital for Consumption, a scheme is about to be introduced by which the benefits and educative influence can be extended to others than those who apply for treatment. It is proposed to get in touch with all the housemates of any phthisical patient who presents himself, ascertain their condition, treat them if necessary, and in any

case arrange that they are taught to keep themselves free from infection.

The Birmingham Anti-Corset League.

Birmingham possesses a society which is devoted to persuading women that they are seriously injuring themselves by wearing corsets. The members of the society are enthusiastic and demonstrate their views whenever possible. In a little over two years they have increased their numbers to 90, two-thirds of whom are women. They claim that there is an increasing demand for reformed dress outfits.

Epidemic of Cerebrospinal Meningitis.

Surgeon-General Flinn has issued a report to the local government board for Ireland on a localized epidemic of cerebrospinal meningitis which occurred in Innisboffin Island and in the Cloggan district of Ireland, neighboring areas separated by ten miles of sea. The origin of the epidemic could not be traced. No cases of epidemic meningitis have been reported in Ireland since 1900.

Pharmacology

Report of the Council on Pharmacy and Chemistry.

The following report was presented to the Board of Trustees of the American Medical Association at its meeting held Feb. 2-3, 1906:

To the Board of Trustees of the American Medical Association.

Gentlemen:—We beg to make the following report:

A conference of the Council on Pharmacy and Chemistry was held at Cleveland, Sept. 11-12, 1905, to which certain manufacturing pharmaceutical and chemical houses were invited to send representatives, as the Council desired suggestions and criticisms regarding the general plan of the work. Several physicians were also invited. The rules were thoroughly considered and finally adopted in the revised form as follows:

(The term "article" shall mean any drug, chemical or similar preparation used in the treatment of disease.)

RULE 1.—No article will be admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article be furnished for publication. The general composition of the vehicle, its alcoholic percentage, if any, and the identity of other preservatives, if present, must be furnished.

RULE 2.—No chemical compound will be admitted unless sufficient information be furnished regarding tests for identity, purity and strength, the rational formula or the structural formula, if known.

RULE 3.—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants and food preparations, except when advertised in an objectionable manner.

RULE 4.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to literature distributed solely to physicians, to advertising in medical journals, or to vaccines and antitoxins.)

RULE 5.—No article will be admitted or retained concerning which the manufacturer, or his agents, make false or misleading statements as to geographical source, raw material from which made, or method of collection or preparation.

RULE 6.—No article will be admitted or retained of which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to therapeutic value.

RULE 7.—Labels on articles containing "poisonous" or "potent" substances must show the amounts of each of such ingredients in a given quantity of the product. A list of such substances will be prepared.

RULE 8.—If the trade name of an article is not sufficiently descriptive of its chemical composition or pharmaceutical character, or is, for any other reason, objectionable, the Council reserves the right to include with the trade name a descriptive title in the book. Articles bearing objectionably suggestive names will be refused consideration.

RULE 9.—If the name of an article is registered, or the label copyrighted, the date of registration and a copy of the protected label should be furnished the Council. In case of registration in foreign countries, the name under which the article is registered should be supplied.

RULE 10.—If the article is patented—either process or product—the number and date of such patent or patents should be furnished.

The proposed book, "New and Non-Official Remedies," was also discussed, and it was tentatively agreed that it should be divided into two parts: Part I to consist of definite chemical compounds and simple pharmaceutical preparations, and Part II to comprise pharmaceutical mixtures. The plan of procedure referred to in the previous report was slightly elaborated. Since the conference the Council has considered the merits of various proprietary articles and has provisionally arranged and classified a large number of preparations which are considered worthy of recognition.

As indicated in the first report, the consideration of pharmaceutical mixtures—the vast majority of preparations belong to this class—proved a most difficult problem. Such a preparation is usually an ordinary mixture, made according to some physician's prescription, or after some well-known formula, modified in some way to disguise its identity, which has been placed on the market as a new preparation under a catchy or suggestive name, accompanied with extravagant therapeutic claims. Such preparations represent nothing new and involve no unusual skill in their manufacture. Their use is to be deplored, but if they are to be used a complete statement regarding their composition should be furnished to physicians. If this were done, and if all mystery regarding them were removed, their use would be very limited. It has been decided, however, that as many of these mixtures as conform to the rules will be placed in Part II of the proposed Annual, where, when similar, they will be grouped together and explicit reference be made to corresponding official preparations.

In this connection, however, it should be borne in mind that standard preparations, such as those in the Pharmacopeia and in the National Formulary—fully equal, if not superior, to the proprietary mixtures—are not only listed in the catalogues of the manufacturing pharmacists and chemists, but are also easily compounded by any experienced retail pharmacist.

While the Council is acting solely for the medical profession it has remembered that there is no antagonism between legitimate pharmacy and medicine, that there is a mutual dependence, and that, consequently, there should be a mutual cooperation between the Council and legitimate pharmacists and chemists. While most of the well-known firms have been cooperating with the Council, some seem to hesitate about doing so. The Council believes, however, that this hesitation comes from the fact that these firms have not fully appreciated the objects for which it is working, and which are believed to be as much in the interest of scientific pharmacy as in the interest of scientific medicine, and therefore, in the interest of all honest and legitimate manufacturers. The Council has endeavored to make it plain and convincing to manufacturers that in the present movement there is no intention to interefere with the proper exploitation of their products, and that it does not expect them to reveal the technical secrets involved in their processes of manufacture, but that it must insist that a truthful statement concerning the actual composition, or the medicinally active components, both as regards quantity and quality, must be given, together with tests for the identification and confirmation of such medicinal constituents.

Certainly as much to be deprecated, and more harmful in their effects than secrecy in composition, are the false and absurdly extravagant claims made by some of the otherwise reputable vendors of proprietary medicines. These claims equal and occasionally surpass the claims made by "patent-medicine" vendors in their advertisements in the newspapers. During the last few years this method of advertising has grown steadily worse, each advertiser apparently wishing to outdo every other in eulogizing his particular preparation. It has finally come to pass that a plain, truthful statement regarding the therapeutic value of an article is generally considered valueless, and even reputable firms have not hesitated to make statements in their advertising literature that have been far from the truth. Many manufacturers acknowledge this and excuse themselves by saying that others have done it and they had to. They acknowledge that loose methods regarding this feature of their business have been in vogue, largely due to unchecked competition by unscrupulous concerns. We presume there is no objection to a reasonable optimism on the part of the manufacturer; but obvious misrepresentations as to the therapeutic value are quite as dishonest as misstatements concerning the composition.

Another difficulty which the Council has experienced in its investigations of synthetics, mixtures and new remedies is found in the character of the names proposed therefor. It is a recognized principle that the name proposed for a remedy should not in any way mislead or deceive. If the name, therefore, is indicative of origin, the origin indicated

must be the real one. If, on the other hand, it is indicative of quality or property, the preparation must have that quality or property. Names which, by their ending or otherwise, are indicative of definite classes of compounds, or which in any part of the name show derivation from any particular source or the possession of any particular quality, must be true to the indication. Many preparations would be excluded from clasification by reason of false or misleading names.

Investigation has shown that, as a rule, the preparations placed on the market by the regular manufacturing pharmaceutical and chemical houses are as represented; at the same time we regret to state that in some instances otherwise reputable firms have been offering to the profession articles that are not in accord with the claims made for them. The Council does not think it wise to be more specific at this time, believing that these preparations will be withdrawn, or that a true statement will be made regarding their character and composition.

Investigation has also shown that certain remedies are being manufactured under patents that do not conform to the specifications of the patents.

Attention is called to the fact that occasional statements respecting the nature of the substances occurring in the mixture or methods of preparation are made by manufacturers which seem to be contrary to the established principles of chemical reactions. As an illustration of this, it may be stated that the mere mixture of two substances, which may possibly react chemically, is not properly represented by supposing that complete chemical reaction has taken place unless that actually has occurred. This is especially true of certain very complex organic compounds, which, it appears, can not possibly be made by the preparation either of the pure acids or of the pure bases, but in which attempts are made to produce the combination by mixing the substances in the crude or unmanufactured state and suming that the chemical reactions have taken place.

In these cases the statement of the manufacturer should convey the facts of the case and not the assumed reactions.

As was mentioned in the former report, an investigation of some of the so-called cod-liver oil preparations has led the Council to believe that some of these articles are fraudulent, since they contain no cod-liver oil, and that both the public and the medical profession are being greatly deceived in many articles that are placed on the market as tasteless or fat-free cod-liver oil.

These are the features of existing conditions that are retarding the work and delaying the approval for admission of some articles which otherwise might be accepted.

The Council recognizes that sufficient time should be allowed manufacturers to make the necessary changes in their labels, circulars and printed matter to conform to the rules. July 1, 1906, has been tentatively fixed as the date when compliance with the rules be required of all preparations. It is hoped that soon after that date it will be possible to issue the first edition of the proposed book, "New and Non-Official Remedies." Although the first number will not be complete, the annual revision will afford opportunity for the admission of such articles as may not at that time have been acted on.

It is hardly necessary to remind you that there is much detail work of a chemical nature connected with this work, and while some of the members of the Council have been devoting much time and labor in this direction it is believed that some of this detail work could be done much more satisfactorily if facilities for it were provided by you at the Association building. Therefore, the Council begs to suggest that, if it is possible to do so, a chemical laboratory be established by the Association with a competent chemist in charge. There is a great amount of work to be done, and it is work that must be continued if the medical profession in the future desires to protect itself from unscrupulous promoters.

The Council reiterates its former plea to those connected with hospitals for their co-operation in making clinical tests. There has been some co-operation of this nature, but not so much as the Council wishes it could have.

The prospects for a satisfactory solution of the various questions which confronted the Council at the beginning are more favorable as time goes on; it wishes to state, however, that the ultimate success of the work must necessarily depend largely on its endorsement by the members of the American Medical Association and by the physicians in general limiting their support to those manufacturers who are supplying them with honest preparations in a legitimate manner.

The evident appreciation of the efforts of the Council by the medical profession of the country is highly gratifying and encouraging.

Respectfully submitted,

C. LEWIS DIEHL, SAMUEL P. SADTLER,
C. S. N. HALLBERG, J. O. SCHLOTTERBECK,
ROBERT A. HATCHER, GEORGE H. SIMMONS,
L. F. KEBLER, TORALD SOLLMANN,
J. H. LONG, M. I. WILBERT,
F. G. NOVY, H. W. WILEY,
W. A. PUCKNER, JULIUS STIEGLITZ,

Members of the Council on Pharmacy and Chemistry, American Medical Association.

Amenoretts.

DODGE CITY, KAN., March 9, 1906.

To the Editor:—As a slight contribution to the fight against nostrums, permit me to relate a recent experience with a detail man for a proprietary preparation made at Topeka, Kan. This man entered my office and introduced himself as the representative of "The Amenorett Company," and laid on my desk a small box containing a number of vaginal suppositories.

He informed me, with zealous kindliness, that the suppositories would cure all "female complaints" and save many a woman from the butchery of the surgeon's knife. He helped himself to a chair and sat down to tell me of the wonderful results achieved by his remedy.

I always listen to these men whenever I have the time, and in this case I heard the familiar tale of restored health after all other means had failed.

He had given me a circular, and this is what I read:

"Amenoretts. The Great Cure for All Female Trouble." "Amenorrhea, leucorrhea, displacements, ulcerations of the womb, pelvic cellulitis, peritonitis, abscess, tumors, sterility, ovarian dropsy, menopause and piles. . . .

"For amenorrhea, leucorrhea, irregular or suppressed menstruation and neuralgia of the womb, use every other night.

"For enlargement and falling of the womb, use every night for three nights, thereafter every other night until cured.

"Ulceration and catarrh of the womb, use every other night. . . .

"Pregnancy period, use once or twice a week after second month.

"Change of life period, twice a week.

"To correct non-development of young women, use three times a week.

"Gonorrhea, use every night for ten nights, or until there is a feeling of lassitude, indicating overuse of the remedy.

"Piles, insert one in the rectum every other night, pushing it well up," and so on.

I asked him what the Amenoretts were made of, and he referred me to the circular. And here is what I read:

"FORMULA OF THE SUPPOSITORY."

"The active principles of Pyrolingenous Acid, Iodine, Picric Acid, Boracic Acid, Quinine, Tetraborate of Soda, Glycerine and Oil of Theobromo."

"TABLETS."

"Pyrolingenous Acid, Iodine, Boracic Acid, and Tetraborate of Soda."

I said: "There is no active principle of pyroligneous acid [wood vinegar], iodin, picric acid or boracic acid. Quinin is itself an active principle of cinchona, while the active principles of sodium tetaborate [borax], and glycerin must have their abiding place in the vivid imagination of the writer of this very remarkable formula. But laying aside these non-essentials, I don't see any quantities specified."

"No," said my visitor, "we don't print quantities."

"Why not?"

He smiled at my evident innocence. "Because," he replied, "you'd take the formula across the street to your

local druggist and we wouldn't get to sell you any of our suppositories. Understand," he continued, "we don't sell these to the laity. We're strictly ethical."

I ignored his last remark; it contained food for reflection, and said: "I certainly shall not buy of you unless I know not only what substances are incorporated in the suppository, but how much of each substance. And I think too much of my patients to experiment on them with such a product. Are you a physician?"

He said that he was not.

"Well, if you were a physician, how do you suppose that you would feel if a man, not a doctor, should come into your office and volunteer advice with regard to the treatment of your patients with something he had to sell, the composition of which he refused to disclose?"

Not being a physician, he didn't know how he would feel under such circumstances. I asked him if he had any difficulty in getting rid of his samples. He said that there was not much, that occasionally a doctor declined them, but that did not often occur. He had recently sampled Kansas City, spending two weeks there, and during the following month he received orders for $200 worth of the goods. And I am afraid that he told the truth.

What right has medicine to be called a learned profession when its votaries, in the use of remedies of unknown composition, exhibit a credulity that puts them on a level with the aboriginal medicine man, and far below that of the Christian scientist? *N.* H. GRAVES, M.D.

Petition in Germany for Central Government Office to Examine New Remedies.

A petition has been presented to the secretary of state for the German empire asking the establishment of a central bureau whose office shall be to examine the new "patent" and proprietary medicines and apparatus put on the market for the cure of disease. The petition was signed by a large number of German physicians, manufacturing chemists, and others. The aim of the central bureau would be something like that of the Council on Pharmacy and Chemistry of the American Medical Association, except that it would be an official institution of the government. The petition cites the present abuses and the scandal of having nostrums and fake apparatus protected by government patents. It also describes with approval the work done by the mayor of Carlsruhe, who, on his own initiative, has had all the remedies which are advertised in the local papers, bill boards, or elsewhere, analyzed, and the reports published to warn the public of the danger of being swindled. The petition also refers to the way in which manufacturers continue a preparation under another name when its has been exposed. The petition owes its inception to the German Antiquackery Society.

"Patent Medicine" and the Lumberjack.

A writer in the *State Review*, published in Grand Rapids, Mich., in the issue of March 3, 1906, comments on the government's action in forcing those who retail certain alcoholic nostrums largely used for liquor to take out a liquor dealer's license, and says that this new policy on the part of the internal revenue service will affect the Michigan lumberjack in particular.

The writer says:

"In nearly all the small lumbering towns in the upper peninsula, and in the cordwood camps conducted in connection with the woods operations of the furnace companies, patent medicines of every kind are sold in immense quantities. The 'medicines' are not purchased by the thirsty individual for the purpose of alleviating physical disorder, but rather with the idea of satiating an unquenchable thirst for 'sometning strong.' In the cordwood camps of Alger County, where Finns and Scandinavians are employed, the most favored patent medicine is known as Hoffman's Drops, a mixture in which ether and other chemicals predominate, and produce the desired result of a stimulant much more quickly than Peruna or the average brand of stomach bitters. The 'Drops' are used almost to the exclusion of all other patent medicines, and are purchased by dealers in case lots, being as staple a commodity as flour and sugar, with the additional feature of yielding a larger profit to the dealer.

"It is not an uncommon sight in stores located near lumber or woodchoppers' camps to find from ten to fifty cases of Peruna or other patent-medicine bitters piled up in the store room. In some localities Hostetter's Stomach Bitters, Rock-candy Cough Cure or other brands are preferred, but in most instances Peruna is the general favorite with the lumberjack, and is bought more eagerly than any other. In a single carload of 'local' freight taken out of Marquette recently on a certain railroad were 150 cases of Peruna consigned to general stores at stations east of here. This single shipment was unusual, of course, coming as it did in one day, but it is given as an illustration of the amount of this 'medicine' consumed in the lumber camps for other than medicinal purposes in the immediate vicinity of Marquette. In the absence of liquor the men are willing to accept any kind of medicine that will 'have the desired stimulative effect.' Not all the men in lumber camps, however, are addicted to the habit of bitters tippling, but the majority of them will take almost any kind of nostrum when liquor is not obtainable."

Working the Doctor.

LA JUNTA, COLO., March 7, 1906.

To the Editor:—Some time ago I received from the Resinol Company, of Baltimore, a sample of their soap. Accompanying the sample was a postal addressed to their home office, soliciting the names of a few of my patients who were likely to be interested in resinol soap. Suspecting that this meant open advertising of the resinol ointment to the public, using our profession for the purpose, I sent the firm the addresses of four of my patients, telling my patients what I had done and asking them to let me see what was sent to them. In a few days all received samples of resinol soap, which, of course, it was perfectly proper for the firm to send, but mark the sly way of advertising resinol ointment direct to the public, using me as their unpaid agent for the purpose. I enclose two circulars. One refers to the soap and, while extravagant claims are made for the soap, there is nothing otherwise objectionable in the circular. The second circular, however, is a different proposition. This circular calls special attention to resinol ointment and contains testimonials from thirteen physicians and one dentist. How a layman can read this circular and these testimonials without being convinced that resinol ointment is the greatest thing on earth for about everything that could happen I do not know. Judging by the circular it certainly has the indorsement of the medical profession, and the layman is told by physicians that it is good for erysipelas, all kinds of local inflammation, such as burns, boils, mammary abscesses, eczema of all kinds, herpes zoster, pruritus ani, pruritus vulvæ, hemorrhoids, scald head, cold sores, red and inflamed nose (although we are told in parentheses that it will not apply in this regard to the red nose caused by alcoholism), fetor of feet or offensive perspiration, or any morbid exudation.

I realize that this particular instance is only one of thousands that are going on all the time. Physicians are "worked" for a testimonial, and after they have given the testimonial they are then "worked" to distribute them to the public so that the public can buy the stuff direct; for why should they go to a doctor when all doctors apparently say that resinol ointment will cure all skin diseases, besides several other things.

Is it not about time that we physicians realized how we are being humbugged and utilized by these proprietary men?

E. GARD EDWARDS.

Some More Endorsements.

Dr. Oscar F. Mayer, City of Mexico, writes:

> "My congratulations to the good work of the Council on Pharmacy and Chemistry, which is appreciated by an old Ph.G."

Dr. B. E. Miller, Albion, Ind., writes:

> "I like that reform movement dealing with drugs, and feel deeply interested in the reports."

Dr. S. H. Landrum, Whitewright, Texas, writes:

> "I am enthusiastic for clean pages and scientific text. . . . THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION gets better every year. Its absolute independence is its great advantage."

Dr. C. L. Upton, Shelburne Falls, Mass., writes:

"I commend most heartily the good work THE JOURNAL is doing in the exposure of the 'patent medicine' fraud and the equally bad or even worse proprietaries. I have stopped my subscription for several journals because of the advertising they carry. If all the members of our profession would make their protests in this way we would soon correct the evil so far as the medical journals are concerned.

"I wish to add a few words about Chamberlain's Colic, Cholera and Diarrhea Remedy. Two weeks ago I was consulted by a railroad telegrapher who had been taking his medicine for the past two years. He began it for a diarrhea and has become addicted to it. He now takes from two to four ounces nightly (he is a night man), and has become a complete nervous wreck. This case needs no comment of mine; it speaks for itself. Let the good work go on."

Dr. T. E. Keeler, Lebanon, Ohio, writes:

"Your crusade against 'patent' and proprietary medicines is doing great good. Publicity is what is needed."

ACTION BY MEDICAL SOCIETIES.

At a meeting of the Kaufman County (Texas) Medical Society, held February 6, resolutions were adopted indorsing the action of the American Medical Association in establishing the Council on Pharmacy and Chemistry, and commending the educational campaign being carried on by the *Ladies' Home Journal* and *Collier's Weekly* in exposing the subserviency of the press to the Proprietary Association of America and the methods of this organization in exploiting remedies. The resolutions also condemned the prescribing of preparations of unknown composition.

At a meeting of the Bucks County (Pa.) Medical Society, held February 14, resolutions were adopted indorsing the stand that has been taken against nostrums and "patent medicines" by THE JOURNAL of the American Medical Association, *Collier's Weekly*, the *Ladies' Home Journal*, the *Druggist's Circular*, the *Farm Journal*, and other publications, and approving the work of the Council on Pharmacy and Chemistry in exposing the nature of many much lauded preparations, and recommending physicians to refrain from prescribing these remedies and from subscribing for or contributing to any medical publication under the control of nostrum manufacturers and vendors. The society also approved the bill to regulate the manufacture and sale of proprietary remedies drafted by the *Ladies' Home Journal*, and suggested that a national commission be created to investigate remedies and to pass judgment on their therapeutic value.

Similar resolutions were passed by the Rhode Island Medical Society, and the Lenawee County (Mich.) Medical Society.

At a meeting held February 21 the New Haven Medical Association decided to appoint a chemist to analyze secret and "patent medicines," provided it can be done without expense to the association.

At a meeting of the Madison County (Texas) Medical Society, held March 13, the following resolutions were adopted:

WHEREAS, The American Medical Association, through its Committee on Pharmacy and Chemistry, is making a heroic and much-needed war in defense of the decency and dignity of American medicine for the benefit of the people of the United States against the corrupt, unscrupulous, avaricious and shameless system of nostrum prescribing, advertising and selling: Therefore be it

Resolved, That the Madison County Medical Society heartily approves the work already accomplished by said Committee on Pharmacy and Chemistry and hopes for a continuance of same.

Resolved, That it condemns the slovenly, ignominious, unscientific and fraudulent practice of prescribing and advertising secret remedies of any kind, whether designed for the use of physicians or the public.

Resolved, That the bill, republished in the March (1906) number of the *Texas State Journal of Medicine*, under the caption "Mr. Bok's Patent Medicine Bill," meets with the approval of the society.

Resolved, That the delegates to the next meeting of the Texas State Medical Association are hereby instructed to have these resolutions read to that body and to ask for proper consideration.

At a meeting of the Evanston Branch of the Chicago Medical Society resolutions were adopted endorsing the work of the Council on Pharmacy and Chemistry of the American Medical Association, and urging that the present campaign of publicity be continued unremittingly. The society also urged members to refuse to sanction in any way the use of any remedy the formula of which is not definitely known, and recommending the careful investigation of the methods of false advertising carried on by so-called medical specialists whereby the public is defrauded, and recommended that in this case also a campaign of publicity be inaugurated.

Medical Legislation

Governmental Department of Health.

Dr. M. W. Gray, Secretary of the Oakland County (Mich.) Medical Society, informs us that at a regular meeting of the society at Pontiac, March 13, 1906, the following resolution was passed:

WHEREAS, The public health problems of this country are of strictly fundamental importance and underlie success in agriculture, manufactures, commerce and every other branch of human activity as was shown in Cuba, where successful military operations depended on the work of the sanitary corps; as was shown in New Orleans, where the commerce of a city and of a great section of the country was paralyzed pending the suppression of an epidemic, and is being exemplified by the brilliant achievements of Colonel Gorgas in the Isthmus of Panama, where the gigantic operations of engineering stand at rest until successful sanitation makes their prosecution possible. Therefore, be it,

Resolved, That it is the sense of the Oakland County Medical Society that a department of health, with representation in the Cabinet of the President, ought to be established, such a department to embrace an expansion of the present Public Health and Marine-Hospital Service, with the addition of other public health agencies now existing and in operation in other departments of the government, together with such other agencies and functions as may best subserve the public welfare.

The Vermillion County (Illinois) Medical Society, at its meeting at Danville March 12, with a membership of seventy-one representative physicians, voted unanimously in favor of the creation of "A Department of Public Health with Representation in the Cabinet."

The Society also voted unanimously in favor of all the subjects recently referred to the auxiliary committee, with the exception of "The Bill to Restore the Canteen in the Army," which received a unanimous opposition vote.

Bills in New Jersey Legislature.

During the present session of the legislature of the state of New Jersey a number of bills have been introduced which are of interest to the medical profession. One provides for a laboratory for the manufacture of diphtheria antitoxin and for its free distribution through local boards of health. Provision is also made for the appointment of sanitary inspectors, health officers and statisticians for the bureau of vital statistics. An appropriation of $20,000 annually is asked for to insure the securing of pure foods, drugs, medicines, etc.

The most important bill is one providing for the regulation of the sale of drugs and for the inspection, analysis and regulation of their manufacture. We quote section one in full: "No person shall manufacture, sell or offer or expose for sale or give away any proprietary medicine or other medicinal preparation containing alcohol, opium or any of its preparations, its alkaloids or their derivatives, nux vomica and its alkaloids and their derivatives, digitalis, chloroform, cannabis indica, chloral or any of its derivatives, bromids, cocain or any of its salts, eucain or any of its salts, acetanilid, antipyrin, bromoform, exalgin, holocain, phenacetin, phenocoll, sulphonal, trional, veronal or any other hypnotic, anesthetic, analgesic or cirdiac, circulatory, respiratory or nerve depressant unless the same shall have plainly and conspicuously stamped or printed on the bottle, box or receptacle containing the same, or on the label affixed thereto, and also on the outside wrapper or package, if any, and also in the inside wrapper and on all circulars accompanying said medicine or medicinal preparation and relating to it, if any, a true statement of the percentage of alcohol and the percentage or proportion of each of the other above-mentioned or described drugs contained in each bottle, box, receptacle or package of such medicine or medicinal prepa-

ration. Such information shall be stamped or printed in antique or gothic type, easily to be read, of a size not smaller than that known as ten-point, and so displayed as to be conspicuous. Where alcohol is used as a solvent, vehicle or preservative, or for any other purpose, it is to be deemed as contained in the medicine or medicinal preparation within the meaning of this act, and the drugs above mentioned or specified shall be described by their common or English names."

The term medicinal preparation as used in the bill is intended to include every preparation or combination or mixture of drugs, or of drugs with substances which are not drugs, when such preparation is said to have medicinal properties or to be a remedy or medicine or cure or food, or is intended to be used for medicinal purposes. The act does not apply to preparations intended solely for external use.

The Patent-Medicine Bill in New York.

AN INTERESTING HEARING.

The senate and assembly committees on public health held a public hearing jointly on the Stevens-Wainwright Proprietary Medicine Bill (Senate No. 258, Assembly No. 456), in the capitol at Albany, N. Y., March 14.

This bill provides that proprietary medicines which contain alcohol, opium or any of its preparations, its alkaloids or their derivatives, strychnin, digitalis, chloroform, cannabis indica, chloral or any of its derivatives, bromids, cocain or any of its salts, eucain or any of its salts, acetanilid, antipyrin, bromoform, exalgin, holocain, phenacetin, phenocoll, sulphonal, trional, veronal or any other hypnotic anesthetic, analgesic or cardiac, circulatory, respiratory or nerve depressant, shall be so labeled as to reveal the presence and percentage of those ingredients.

Only seven persons appeared in opposition to the bill, viz., George L. Douglass, attorney for the Proprietary Association; Mr. Muir and Mr. Rogers, for the New York State Pharmaceutical Association; Mr. A. C. Searles, Mr. Peter Diamond and Mr. George Leanau, retail druggists. In behalf of the drug section of the New York City board of trade, Mr. Peters offered a substitute bill, of entirely different scope, viz., a bill to prohibit the sale of cocain, eucain, opium, morphin, heroin, chloral hydrate or any salt or compund of any of the foregoing substances, or any preparation or compound containing any of them, except on physician's prescription.

Two of the objections made to the Stevens-Wainwright bill had already been foreseen by the committee for safeguarding the sale of narcotics, under whose auspices the bill was introduced, and amendments had already been prepared to cover the objections, viz. (1) that to guard against injustice arising from the possibility of errors in analysis, the results of analyses should not be published by the State Department of Health until after thirty days' notice to the manufacturer. (2) The other objection was against the general descriptive words intended to cover new variations of coal-tar derivatives. The proposed amendment is to strike out those words and insert a provision authorizing the State Board of Health to add to the drugs enumerated in the bill, from time to time, as it may deem necessary for the protection of the public health. This is in accordance with the powers already conferred by statute on the State Department of Health with reference to additions to the poison list.

Mr. Douglas, for the Proprietary Association, argued that the bill meant "destruction, not regulation." He received his answer later, that such an assertion was tantamount to an admission that many of the preparations on the market which he was employed to defend were of such a nature that the public would refuse to buy them if it knew their contents.

He argued that the bill discriminated between proprietary preparations and medicines listed in the Pharmacopeia, that a Pharmacopeia preparation might contain 90 per cent. alcohol and be sold without labeling, while proprietary medicines which contained a small amount of alcohol, for example, 5 per cent., would come under the law. The obvious answer was made that the object of the bill was publicity. The ingredients of Pharmacopeia preparations are known and they are properly excepted from the operation of the bill, as there is no desire to interfere with legitimate drug business.

Mr. Douglas argued that the bill was intended to prejudice the public mind against proprietary medicines; that alcohol was necessary as a solvent and to prevent freezing and precipitation. That proposition was met by a statement that the bill does not prohibit the use of alcohol nor attempt to limit its use or to condemn or in any wise criticise the use of alcohol, but simply provides that its presence shall be made known.

Mr. Douglas laid great emphasis on the fact that the users of proprietary medicines were not there advocating the bill, but Mr. William A. Jenner disposed of this argument effectively by reminding the committee that the users of those remedies were ignorant of their contents, and that while they were not there asking for legislation, neither were they present to oppose it.

A. A. Seymour, secretary of the State Department of Health, said he represented the commissioner of health. He advocated the bill. Said the department desired it and would enforce it.

The importance of the subject was well attested by the presence of so many distinguished men in favor of the bill, as follows: Mr. William A. Jenner, Dr. A. Jacobi, Dr. W. Gilman Thompson, Dr. Egbert Le Fevre, Dr. Arthur T. Root (representing the New York State Medical Society); Dr. Wisner R. Townsend, Dr. Albert Weston, Dr. Arthur T. Holding (Albany County Medical Society), William Jay Schieffelin, Ph.D. (of Schieffelin & Co., manufacturing druggists), Samuel Hopkins Adams (of *Collier's Weekly*), Rev. Hervey Wood (representing National Temperance Society and delegated to represent all the Baptist organizations in the state), Mrs. Frances W. Graham (president New York State Woman's Christian Temperance Union, representing nearly 900 unions and about 26,000 members in the state), Rev. John M. Trout (delegated to represent all the churches of the Westchester presbytery), Homer Folks (delegated to represent the State Charity Organization Society), Edward T. Devine (delegated to represent the Charity Organization Society), Seth B. Robinson, Alfred L. Manierre.

Correspondence

Poison Ivy.

BUFFALO, N. Y., March 17, 1906.

To the Editor:—Referring to the discussion in regard to *Rhus toxicodendron and Rhus venenata* in your issues of January 27 and March 17, and intervening issues, I would like to make some observations and to ask some questions. I seem to be immune. When a little boy, spending the summer vacations on a farm, I repeatedly tried to poison myself by walking through patches of ivy barefoot, and even rubbing it into the skin and into abraded places, but failed in a number of trials in several summers. My object was to exchange the hygienic advantages and loneliness of the country for the more familiar disadvantages of the city. For a number of years afterward I did not hesitate to handle the plant freely, and was never poisoned. Since arriving at years of relative discretion I have avoided the plant as a matter of ordinary caution, but have not hesitated to walk through it, and have often touched it accidentally without harm.

In several summers' experience as physician at a boys' camp I never encountered a marked case of poisoning, although I have seen it produce urticaria-like wheals that promptly disappeared after washing with plain water. As a matter of precaution the boys were assembled at the beginning of each encampment and warned against the two poisonous rhoes, *Solanum dulcamara*, etc. Many cases of poisoning are due to confusion with Virginia creeper, *Ampelopsis quinquefolia*. A good way to impress the difference on children is to tell them that they can safely shake hands with the plant that has five leaflets, corresponding to their five fingers, but not with the three-leaved plant.

I have known of bad cases of poisoning due to the use of *Rhus toxicodendron* in place of toilet paper, and one of my friends was terribly poisoned in winter by a homeopathic physician who ordered the tincture in a liniment for some form of rheumatism.

Can anyone state from actual experience whether poisoning occurs from conveyance by wind, and whether dermatitis tends to occur a year later without fresh exposure? Both of these claims seem absurd, and yet I am credulous enough to accept any statement, however absurd, it it can actually be proved—and some things that have seemed absolutely absurd have been proved. A. L. BENEDICT, M.D.

CINCINNATI, OHIO, March 16, 1906.

To the Editor:—In the current issue of THE JOURNAL A. W. Balch, Washington, passed assistant surgeon, United States Navy, takes exception to my article on "Dermatitis Venenata," abstracted in THE JOURNAL. He says that while I have had *Rhus toxicodendron* poisoning twice he has had it eighty times. He queries: "Is it possible that the work of Pfaff is not yet known to the profession?" Had he read the original of my article, not the abstract, he would have seen full reference to Pfaff and his work. I should be pleased to read Dr. Balch's experiences with his eighty cases of poisoning from *Rhus toxicodendron* more fully written up. E. S. MCKEE, M.D.

Quinin in Pneumonia.

NEW RICHMOND, OHIO, March 16, 1906.

To the Editor:—In 1874 I read, at a meeting of the American Medical Society in Cincinnati, my translation of an article from "Volkmann's klinische Vorträge," written by Jurgenson in 1872, in which he advocates the use of large doses of quinin in the treatment of pneumonia in conjunction with cold water baths. He gave from 25 to 40 grains at one dose, or if this was not advisable owing to an idiosyncrasy of the patient, he divided the dose in three or four equal portions, giving each at intervals of fifteen or twenty minutes, but so that the entire quantity was taken within an hour, or the reduction of temperature would not take place. I followed out this quinin treatment for two years, but found that it did not influence the course of pneumonia either favorably or otherwise, and it was often followed by such unpleasant symptoms of cinchonism that I desisted, and have not used the method since. R. F. ERDMAN, M.D.

Staining of Conjunctiva by Argyrol.

DOVER, N. H., Feb. 28, 1906.

To the Editor:—In a pamphlet sent out by the manufacturers of Argyrol I find the following statement: "Argyrol is the only silver salt that does not permanently stain the conjunctiva. It may be used with safety by patients themselves, as often as required."

Last week a patient appeared in my office who had been using a 10 per cent. solution of Argyrol in the left eye for nearly a year. It was originally prescribed by a competent oculist, but, of course, with the intention that it should only be used for a short time. I took pains to hunt up the original prescription to be sure that it was Argyrol.

In this case the bulbar conjunctiva, the caruncle, and the lining of the lid were as badly stained as from the prolonged use of a solution of nitrate of silver.

LOUIS W. FLANDERS.

The Pure-Food Bill Board of Experts.

ANN ARBOR, MICH., March 18, 1906.

To the Editor:—Your editorial stricture on the provision in the amendment to Section 9 of the Hepburn bill providing for the appointment of a board of experts to pass on the wholesomeness or unwholesomeness of preservatives would be just if it were true, but you were laboring under a misapprehension when you made your editorial statement. You say that the decision of the board is final and that there is no appeal to the courts or to the Secretary of Agriculture. This is all wrong. The board of experts is selected by the Secretary of Agriculture, and he is instructed by the law to appoint disinterested men; the Secretary fixes the compensation allowed members of the board and he may accept or reject their findings. The Secretary of Agriculture, and he alone, is given the authority to render decisions, and even his decisions are of no further value than for "the guidance of officials charged with the administration of food laws and for the information of courts." The statement that no appeal from the findings of the board can be made in the courts is too puerile to deceive anybody. In this country, no one, not even a food manufacturer, can be convicted without a trial, and Section 6 of the Hepburn bill makes it plain that before any preservative can be condemned it must be shown by the prosecutor that it is poisonous or deleterious to health, and in such a trial the prosecutor and the defendant both have the right to bring forth whatever evidence each is able to produce. The findings of the board of experts as provided for in the amendment to Section 9 in such a trial may benefit either the prosecutor or the defendant, and either certainly would have the right to support or to combat the findings of such a board. The sole object in the amendment is to provide the Secretary of Agriculture with the best advice possible. A committee of agricultural chemists constitutes a suitable body for determining methods and standards for chemical analyses, but agricultural chemists are not fitted by their specialty to determine the effects of preservatives on the human body. It seems unnecessary to argue this point farther. V. C. VAUGHAN.

[With all due respect to Professor Vaughan, and recognizing the fact that he is thoroughly conversant with the subject, we are still of the opinion that the clause to which we objected last week is vicious. Our readers, however, may judge for themselves. The clause will be found in section 9 of the bill, which was published last week.—ED.]

Miscellany

The Record of the House.—Each house in Paris now has to have its sanitary record. It is something like a bank book or portfolio for each individual house. The cover bears the subdivision, ward, street and number, and inside is a small plan of the house, with designation of all drain pipes, cess pools, etc. A loose sheet contains a description of the house, another contains a record of all the cases of communicable diseases that have occurred in the building, and the deaths from them, recorded as they occur. Another sheet records the disinfections done on the premises, with dates and causes. One or more sheets contain the record of the changes ordered by the bureau of hygiene, and the record of the compliance with these orders. One or more sheets further contain the results of sanitary inspection of the house. All these house books for one street are kept in an envelope or box, which has a record on the outside of the length and width of the street, number of houses, number of inhabitants, system of sewerage, water pipes, etc. P. Juillerat is chief of the bureau d'assainissement de l'habitation et du Casier sanitaire des maisons de Paris, and thus has charge of all this work. It is part of the police department. He describes its workings in the first number of *Hygiène Générale et Appliquée*, Jan., 1906, and discusses the expense of introducing a system of "house books" (casier sanitaire). A French law of 1902 ordered the formation of a bureau of hygiene in every town of 20,000 inhabitants or over, and he assumes that the officials of this bureau will do the work necessary for the compiling of the records of each house. The first expense will not be much more than twenty cents a house, and, once installed, the expense of maintenance will be trifling. The Paris authorities are much gratified at the way in which the system is working, although scarcely more than commenced there.

Fallacies in the Clinical Diagnosis of Gonorrhea.—Dr. G. Frank Lydston, Chicago, in a paper read before the Mississippi Valley Medical Association, said that the most dangerous type of infection of the female is that in which the external manifestations of the disease are absent or wanting. Gonorrheal urethritis in the female in the chronic form may present no secretion whatever on external examination. There may be little or no vaginal, cervical, or uterine discharge, and even such as there is may, on examination, fail to disclose the micro-organisms of gonorrhea. Notwithstanding this, the mucous glands may be involved, and under the influence of sexual excitement and the mechanical effect of coitus the

physiologic hypersecretion might convey to the meatus gonococci in abundance. The result is obvious. It seems to Dr. Lydston that it is impossible for a physician to state in any given case that a woman is free from infection. This is one of the strongest arguments against regulation and medical inspection of prostitutes. He entertained serious objections to the medical profession constituting itself an assurance society for the protection and promulgation of the social evil, but aside from this scruple there remains the fact that no reliable system of inspection or examination can be devised. In many cases of infection of healthy women by a latent gonorrhea of the husband, mixed infection is responsible, and the resulting pathologic condition in the female is non-specific. Its being non-specific, however, does not preclude the possibility of its becoming very serious. Dr. Lydston thinks that there are no tests which will enable the physician to give a positive opinion of the infectiousness of a given case of suspected latent gonorrhea. The clinical history in many cases is more important than the laboratory study of the case, and a careful combination of both methods of study is always essential. The physician should be as chary of assuming responsibility in advising a gonorrheic in the matter of matrimony as he should be in advising syphilitics under similar circumstances.

Injuries from Quack Practices.—The German Antiquackery Society has been diligently collecting instances of injury from quack practices that have come under the personal observation of its members. A list has just been published in the organ of the society, *Hygienische Blätter*, for February. It includes 91 cases of severe injuries, terminating fatally in 37. All the particulars are on file at the society's office. (See page 453.) In one case inflammation of the pelvic connective tissue was treated by a quack with daily energetic massage, resulting in fatal septicemia. In another an ovarian cancer was said to be the pregnant uterus and was massaged until too late for its removal. In another case a tubal pregnancy was treated as "colic." An incipient cancer of the cervix, diagnosed by a physician with the microscope, was treated by a quack with hydrotherapy, massage and electricity until it became inoperable. In 27 cases of serious injury resulting from quack treatment of surgical lesions 9 resulted in death from septicemia, including 1 death from general sepsis after a small wound on the finger had been treated with bone sawdust compresses for a long time. Two cases of incarcerated hernia resulted in fatal gangrene after being treated with sandbags in one case and with tea and water in the other. One individual succumbed to the effects of necrosis of the bone after a knee lesion had been long treated with a plaster spread on pieces of newspaper. Another with hip-joint affection, treated with vigorous massage, succumbed to a resulting meningitis. One child died in consequence of a salve having been rubbed into its eye by a quack, and another was rendered blind. The cases are numerous in which cancers were allowed to become inoperable by wasting time with irregulars. The editorial concludes with the remark that many persons who have come to grief in the hands of irregulars are ashamed to confess it to the physician to whom they apply afterward. Others exonerate the quack for the evil results of his practices. One case is known in which a woman had been treated for cancer and her testimonial to her cure was repeatedly published in the papers. Investigation showed that she had died long since of her cancer. The quacks included magnetopaths, nature healers, untrained midwives, bone-setters, barbers, herb doctors, etc. Four were druggists, some of whom diagnosed and treated by letter.

Analyses of Food Products in Kansas.—In the January *Bulletin* of the Kansas State Board of Health Prof. E. H. S. Bailey, state chemist, reports on adulterations. Having stated that many adulterants are harmless and are intended to increase the bulk or weight, at the customer's expense, while others are positively injurious, even poisonous, Prof. Bailey gives the results of his analysis of a number of samples of food, including flavoring extracts, preserved fruits, syrups, vinegar, nitrogenous foods, and baking powders. Of twenty-five articles tested he found twenty-one adulterated. He found a sample of "Puritan" brand extract of lemon to be destitute of oil of lemon and colored with a coal-tar dye. Extract of vanilla, "Puritan" brand, "strictly pure," he reports contained none of the natural resins of the vanilla bean. "Silver Leaf" tomato catsup he found to be artificially colored and preserved with salicylic acid. He reports that a pint glass can of strawberry, "Orchard" brand preserve, was dyed red with a coal-tar dye and sweetened with glucose. A few small strawberries were scattered through it. "Absolutely Pure Canada Sap Maple Syrup" he discovered was cane sugar, a much cheaper article, and therefore a fraud on the customer. On analysis, two bottles of vinegar, one called "White Vinegar" and the other "Wine Vinegar," were found to be artificially colored distilled spirit vinegars. He reports that "The Kansas City Baking Powder, Absolutely Pure," and Shepard's "Economical Absolutely Pure Baking Powder," among others, were alum phosphate mixtures—perhaps *pure* in the technical sense, but not in the pure food sense.

Sanitary and Moral Prophylaxis.—In the *Boston Medical and Surgical Journal*, Feb. 8, 1906, Dr. William L. Holt urges the organization of a state society on venereal prophylaxis. A year ago in New York the American Society of Sanitary and Moral Prophylaxis was founded. Similar societies already existed in Germany, Holland, and other European countries. The object of these societies is to limit the spread of diseases which have their origin in the social evil, and to study the best means of every order, moral, legislative, social and medical to be employed in the prevention of these diseases. Dr. Holt suggests a campaign of popular education similar to the anti-tuberculosis campaign. The ignorance of the masses, especially young people, concerning sexual hygiene, is deplorable. A system of education, whether at home or at school, is incredibly stupid if it leaves our children in darkness concerning the laws governing sexual function and the ravages and terrible consequences of venereal disease. Tainted and degenerate offspring, sterility, and abortion are among the strongest agents for race suicide. There should be a state branch of the national organization in every state in the union. It is a service which the medical profession owes to society to spread all the scientific information possible concerning this delicate and important matter.

Treatment of Chancroid by Heat.—E. Welander of Stockholm, describes in *Wiener klin. therap. Wochenschr.* the method which he has employed for many years in the treatment of soft chancre by the prolonged application of warmth. He uses in the hospital an apparatus by which continuous circulation of water of regulated temperature is carried over the surface of the ulcer, which has been prepared by curetting away the sloughing material and thoroughly cleansed. A layer of moist cotton wool is first applied, then the lead tubes, which can be bent to suit the surface, then another layer of moist cotton, the whole is then warmly packed and secured with a bandage, which can be removed and renewed three or four times daily for the needs of urination and defecation. Two days' application may suffice, but it is better to keep it up a little longer, or if it is discontinued, to use warm boric acid lotions until healing is complete. In private practice he allows the patient to make his own moist warm applications, either immersing the part in water at 50 C., or using frequently renewed applications of cotton soaked in water at 50 to 55 C. In either case the applications should be made at least four times a day and kept up for 15 to 20 minutes each time. After each one the ulcer should be dried and iodoform applied. The heat treatment has also been employed with good results for other foul sores (non-syphilitic) of the anogenital region. He has also used it in herpes tonsurans, but here a somewhat higher temperature is required on account of the somewhat greater resistance of the germs and spores.

Treatment of Typhoid.—As to medicines, the passing years have lightened my armamentarium greatly. The coal-tar antipyretics ought rarely to be used, for while their immediate effect may be good, their ultimate influence on the heart is bad. As Dr. Baruch of New York, the great hydrotherapist, has so facetiously put it, "their chief virtue is that they enable the patient to die with a normal temperature." On this account I prefer to reduce the temperature, when excessive, by hydrotherapy, using tepid or cool sponging if the temperature be between 101.5 and 103; the cold pack, cool affusions, or the

cool or graduated bath, if it be above 103. If the temperature is below 101.5 degrees, I believe the patient is better left undisturbed. Cold to the head, by ice-bags, Leiter's coils, or water compresses, is a valuable adjuvant. The value of these measures lies in four directions: First, lowering of temperature; secondly, as a nervous sedative; thirdly, general tonic effect on the heart; lastly, a lowered death rate.—Van Zant, in *Denver Medical Times.*

Tuberculosis Dispensary at Madrid.—V. Montenegro publishes an interesting series of notes in the *Siglo Medico*, Nos. 2626-8, taken during two years' workings of the Antituberculosis Dispensary at Madrid, with 1,000 tuberculosis patients. The majority were between 20 and 30 years old, or from 30 to 40, with over 2 per cent. under 10, and over 14 per cent. between 10 and 20 and between 40 and 50. About 66 per cent. of the patients had no tuberculous family antecedents. In 50 per cent. of all the patients the chest measure was equal to or more than half the height. In a number of cases of hemoptysis it proved to be the result of mitral stenosis. The lungs presented physical signs suggesting a tuberculous lesion, probably from compression of the lung by the dilated auricle, but repeated examination and radioscopy failed to reveal any tuberculous process. Such patients were generally women.

Double Nephrotomy for Kidney Stones.—M. Dezarlo describes some unusual circumstances attending the removal of four kidney stones weighing 45 gm., nearly 625 grains, from a woman of 28. The pains and discomfort were always in the left kidney, and a radiogram showed the four stones plainly. The operator did not see the radiogram and consequently he opened up the left kidney, finding it sound and free from stones. Examination of the radiogram then revealed that the stones were in the "silent" right kidney. All disturbances ceased after the nephrotomy, and nothing further was attempted for seven months, when recurrence of pain compelled intervention on the other kidney. The stones were found as shown in the radiogram and easily removed, with the rapid recovery of the patient. They consisted principally of calcium phosphate.—*Siglo Medico.*

Bars to Therapeutic Progress.—"In the domain of science every fact is a legal tender." Publicity is essential to progress. In medicine secrecy stultifies the calling and its followers, making it the only learned profession of the age which in so far, yet lingers in the embrace of the middle ages. Obviously no real therapeutic progress is possible where the prescriber and the world is informed only that the triumphant conduct of a certain case from death's door to convalescence has been wrought through the mediumship of "Puffer's Preposterous Painfugine," with the composition of which the enterprising manufacturer has not seen fit to entrust the complacent prescriber.—Jackman, in *Jour. of Medicine and Surgery.*

Sectarianism Harmful.—The realization that sectarianism is restrictive rather than helpful, that it divides and weakens, where union and strength are needed, has made the grat majority of physicians in all ages desire a united profession. They have sought to avoid the use of any term that would imply a school or sect.—*Columbus Medical Journal.*

Association News

Member or Subscriber?

In the American Medical Directory, now being prepared for the press, members of the American Medical Association will be designated by the symbol ⊕. There are a number of physicians taking THE JOURNAL as subscribers who are eligible to membership. Any one in doubt as to whether he is receiving THE JOURNAL as a member or as a subscriber can refer to the address label on the wrapper of his JOURNAL; if the month and year appear, such as "7-1-06," it means that the name is on the list of subscribers; if only the year "06," or no date at all appears, the name is on the membership roster. On advertising page 40 in this issue is an application blank, and any subscriber who is eligible, desiring to become a member, can be transferred to the membership roll by signing the application, having it certified by the secretary of his state society and forwarding it, together with receipt for current year's subscription, or a remittance covering the same, to the American Medical Association, 103 Dearborn Avenue, Chicago.

Marriages

LAWRENCE H. BRUNDAGE, M.D., to Miss Martha Glotfelter, both of Xenia, Ohio, March 1.

OSWALD O. KAFER, M.D., Newbern, N. C., to Miss Lilian May Taggart, at Baltimore, March 7.

JOHN U. CALHOON, M.D., Follansbee, W. Va., to Mrs. Elizabeth Witner, at Darlington, Pa., March 5.

HENRY KREUDER, M.D., New York City, to Miss Charlotte Louise Masecar of Monroe, Mich., March 6.

EDWARD W. HANLON, M.D., Marysville, Cal., to Miss Mamie Kelly of Napa, Cal., in New York City, last week.

JAMES E. MADDUX, M.D., Sebastopol, Cal., to Mrs. Eugenia Cantel Towne of Petaluma, at San Francisco, March 12.

Deaths

Peter Van Pelt Hewlett, M.D. New York University, New York City, 1868; a member of the Essex District (N. J.) Medical Society; president of the Newark Medical Association in 1871 and 1872, and its secretary in 1869 and 1870; for several years a member of the Newark Pathological Society, and for a long time secretary and curator of the New Jersey Academy of Medicine; from 1868 to 1874 attending physician at the city dispensary; in 1873 attending physician and curator of St. Michael's Hospital; from 1879 to 1891 county physician; for many years visiting physician at the Newark City Hospital, and a member of the board of education from 1876 to 1883, died at his home in Newark, March 13, after an illness of nearly a year, believed to be malignant, aged 59.

Leonard Lawshe Skelton, M.D. Northwestern University Medical School, Chicago, 1889; professor of nervous and mental diseases at the Illinois Medical College; professor of internal medicine and physical diagnosis, Chicago Clinical School; professor of physiology, Chicago College of Dental Surgery; for several years a member of the staff of the Illinois Eastern Hospital for the Insane, Kankakee, died at his home in Chicago, March 14, from uremia, after an illness of three days, aged 42.

Alvin Thayer, M.D. Medical College of Louisiana, New Orleans, 1845; a member of the American Medical Association and of the Medical Society of the State of Pennsylvania; one of the best known physicians of Erie, and a member of a distinguished family of physicians extending back several generations; surgeon of the One Hundred and Forty-fifth Pennsylvania Volunteer Infantry during the Civil War, died at his home in Erie, March 11, after an illness of more than a year, aged 81.

Joseph Vincent Ricketts, M.D. Miami Medical College, Cincinnati, 1891; son of Dr. Girard Robinson Ricketts, and brother of Drs. Edwin S. and B. Merrill Ricketts of Cincinnati; a graduate of the United States Naval Academy, Annapolis; for several years a practitioner of Cincinnati, died at his home in Gas City, Ind., March 12, from pulmonary edema, after a brief illness, aged 39.

Elizabeth N. Bradley-Bystrom, M.D. University of Paris, France, 1887; formerly a practitioner of New York City, and a member of the New York Academy of Medicine, New York County Medical Association, New York Pathological Society and New York Neurological Society, died at her home in Dobbs Ferry, N. Y., March 9, from paralysis, after a long illness, aged 53.

Fordyce H. Benedict, M.D. Albany (N. Y.) Medical College, 1868; the dean of the medical fraternity of Weedsport, N. Y.; a veteran of the Civil War, and a member of the Cayuga County Medical Society, died at his home, March 8, from pneumonia, after an illness of three weeks, aged 61.

John B. Brown, M.D. Medical College of the State of South Carolina, Charleston, 1858; a member of the Medical Society of the State of North Carolina and of the Robeson County Medical Society, died at his home in Ashpole, N. C., December 31, after an illness of a month.

Grove Spooner Beardsley, M.D., medical director United States Navy, retired Jan. 2, 1900, with the rank of rear admiral; a member of the American Medical Association; a veteran of the Civil War and of the Spanish-American War, of Syracuse, N. Y., died in Atlantic City, N. J., March 8, aged 68.

Earl V. Rowe, M.D. St. Louis College of Physicians and Surgeons, 1893, of Gila Bend, Ariz., physician to the Southern Pacific Railway at that point, died in St. Mary's Hospital, Tucson, March 8, from tuberculosis, after an illness of four years, aged 32.

Shelby M. Dodson, M.D. St. Louis Medical College, 1864, postmaster of Santa Clara, Cal., for four years, and for many years a practitioner of Santa Clara and San José, died at his home in the latter city, March 4, after a long illness, aged 67.

Lauren T. Holland, M.D. College of Physicians and Surgeons, St. Joseph, Mo., 1882; coroner of Los Angeles County from 1889 to 1903; a veteran of the Civil War, died suddenly at his home in Los Angeles, March 6, from heart disease, aged 62.

Garrett D. Buckner, M.D. Jefferson Medical College, Philadelphia, 1864; for many years a practitioner of Petersburg and Tullahoma, Tenn., died at the home of his son-in-law in Nashville, January 21, after an illness of five months, aged 65.

William Harper Sherwood, M.D. Cleveland Medical College, 1855, one of the most prominent practitioners of Painesville, Ohio, died at his home in that city March 10, from pneumonia, after an illness of less than a week, aged 73.

Charles Edward Estes, M.D. Bellevue Hospital Medical College, New York City, 1868, a veteran of the Civil War, died at his home in Columbus, Ga., March 6, from ptomaine poisoning, after an illness of two days, aged 63.

Elijah L. Irvine, M.D. Willamette University, Medical Department, Salem, Ore., 1883, formerly a practitioner of Portland, Ore., was found dead, March 12, at his room in the Lick House, San Francisco, aged about 45.

James Hyser Hill, M.D. University of Louisville, Medical Department, 1850, assistant surgeon of the Thirteenth Missouri Volunteer Infantry during the Civil War, died at his home in Springfield, Ill., March 6, aged 81.

Benjamin R. Pearson, M.D. Medical College of Alabama, Mobile, 1881, of Montgomery, Ala., died at the home of his daughter in Richmond, Ky., from locomotor ataxia, March 11, after an illness of seven years, aged 56.

P. W. Blakeley, M.D. (Years of Practice, Illinois), 1878, for nearly twenty years a practitioner of Galatia, Ill., died at his home in Marion, Ill., March 4, from lung disease, after an illness of several months.

Charles W. Townsend, M.D. New York Homeopathic College and Hospital, New York City, 1893, of New York City, died from brain abscess at the Hahnemann Hospital, New York City, March 7, aged 37.

John W. Cooper, M.D. Hahnemann Medical College, Philadelphia, 1884, health officer for Cecil County, Md., died at his home in Elkton, Md., March 10, from nephritis, after an illness of several years, aged 56.

O. C. Gilliland, M.D. Medical Department of Columbian University, Washington, D. C., 1894, died at his home in Washington, March 1, from disease of the lungs, after an illness of more than a year, aged 36.

John Benjamin Humphrey, M.D. Kansas City Homeopathic Medical College, 1897, died in Colorado City, Colo., January 1, from tubercular meningitis, after an illness of twenty-one months, aged 36.

R. H. Darling, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1882, of Crystal Falls, Mich., died in St. Agnes' Hospital, Fond du Lac, Wis., from brain tumor, March 7, after a long illness.

Lawrence J. Gerold, M.D. Baltimore Medical College, 1901, assistant surgeon at the State Soldiers' Home Hospital, Bath, N. Y., died at that institution, March 15, from heart disease, aged 41.

Henry J. Fortlage, M.D. University of Bonn, Germany, 1884, a charter member of the Cleveland Academy of Medicine, died at his home in that city, March 8, after a protracted illness, aged 48.

Cassander Paddock, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1875, died at his home in Fresno, Cal., from cancer, after an illness of nearly two years, aged 56.

Jewett Williams, Jr., M.D. Detroit College of Medicine, 1890, died at his home in Adrian, Mich., March 9, from osteosarcoma of the pelvis, after an illness of nearly five months, aged 42.

Francois Xavier Perrault, M.D. Ecole de Medecine et de Chirurgie, Montreal, 1850, formerly superintendent of the St. Jean de Dieu Insane Hospital at Longue Pointe, Quebec, died March 6, at the Hotel Dieu, Montreal, after an illness of two weeks, aged 80.

A. D. Axtell, M.D. Columbus (Ohio) Medical College, 1854, of Youngsville, Pa., died at the State Hospital, North Warren, Pa., January 20, after an illness of two years, aged about 80.

Donald Kennedy, M.D. Kentucky School of Medicine, Louisville, 1894, formerly of Shelbyville, Ind., died recently from consumption in Denver, Colo., after an illness of five years.

Hugh Nelson, M.D. Washington University School of Medicine, Baltimore, 1867, died at his home in Minneapolis from disease of the liver, after an illness of two weeks, aged 63.

Charles Edward Prentiss, M.D. University of Georgetown, Medical Department, Washington, D. C., for many years assistant librarian of Middlebury (Vt.) College, died recently.

John L. Hebron, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1853, died at his home in Hot Springs, Ark., March 8, from angina pectoris, aged 73.

C. W. Higgins, M.D. Starling Medical College, Columbus, 1865, died at his home in Derby, Ohio, March 8, from cerebral hemorrhage, after an illness of five months, aged 69.

Hannah Christiana Golden, M.D. State University of Iowa, College of Homeopathic Medicine, Iowa City, 1882, died at her home in Vinton, Iowa, March 6, after a long illness.

Edward W. Derby, M.D. New York University, New York City, 1853, for more than fifty years a practitioner of New York City, died at his home, March 10, aged 77.

Emil Luck, M.D. Dartmouth Medical School, Hanover, N. H., 1885, died at his home in Paterson, N. J., March 8, from chronic nephritis, after a long illness, aged 37.

Cassius W. Brooks, M.D. University of Vermont, Medical Department, Burlington, 1870, died recently at his home in Enterprise, Kan., and was buried March 10.

Adam K. Leberknight, M.D. Jefferson Medical College of Philadelphia, 1878, died at his home in Orrstown, Pa., March 4, after an illness of six months, aged 55.

Rush M. Brown, M.D. College of Physicians and Surgeons in the City of New York, 1882, died at his home in Cordele, Ga., January 11, after a long illness, aged 48.

James A. O'Malley, M.D. New York University, New York City, 1887, died at his home in Pittston, Pa., from pneumonia, after an illness of two weeks, aged 43.

William H. Loomis, M.D. Hahnemann Medical College and Hospital, Chicago, 1876, of San Francisco, Cal., died at his home in East Oakland, Cal., February 9.

W. J. Pyland, M.D. Vanderbilt University, Medical Department, Nashville, 1867, died at his home in Wimberley, Texas, March 4, after a lingering illness.

Nicholas J. Dorsey, M.D. University of Maryland School of Medicine, 1847, for many years a practitioner of Chicago, died in Joliet, Ill., March 11, aged 84.

William Gordon Niles M.D. Jefferson Medical College, Philadelphia, 1904, died from pneumonia in the Presbyterian Hospital, Philadelphia, March 16.

Thomas W. Bortree, M.D. Jefferson Medical College, Philadelphia, 1889, died at his home in Winwood, Pa., March 4, from heart disease, aged 46.

Frank J. Freel, M.D. Long Island College Hospital, Brooklyn, N. Y., died from pneumonia at his home in Stony Creek, Conn., March 9, aged 47.

Robert W. Duncan, M.D. University of Louisville, Medical Department, 1876, died recently at his home in White Mills, Ky., from paralysis.

Frederick C. Hennessy, M.D. Bellevue Hospital Medical College, New York City, 1897, died recently at his home in San Diego, Cal.

Francis H. Whitsitt, M.D. College of Physicians and Surgeons, San Francisco, 1897, died recently at his nome in Kernville, Cal.

J. Edgar Shepard, M.D. Missouri Medical College, St. Louis, 1883, died from heart disease at his home in Skidmore, Mo., March 4.

Lewis M. Webb, M.D. St. Louis Medical College, 1872, of Ewing, Ill., died at his home in that city, March 9, aged 59.

Queries and Minor Notes

MEDICINES CONTAINING ALCOHOL—SODIUM CHLORID ELIMINATION—SODIUM CACODYLATE IN CHOREA.

PLAINES, KANS., March 7, 1906.

To the Editor:—1. Can you give me any information pertaining to the sales of "patent" and proprietary medicines containing a certain percentage of alcohol, as I understand that the ruling of the Department of Internal Revenue will go into effect about April 1. I wish to know what medicines it will include.

2. What drugs will rid the system of hyper-sodium chloridia either chemically or mechanically, as advocated in certain forms of nephritis and epilepsy?

3. Has sodium cacodylate ever been advocated in treatment of chorea? G. A. NICKELSON, M.D.

ANSWER.—1. The following preparations will be affected by the ruling referred to: Atwood's La Grippe Specific, Cuban Gingeric, DeWitt's Stomach Bitters, Dr. Bouvier's Buchu Gin, Dr. Fowler's Meat and Malt, Duffy's Malt Whiskey, Gilbert's Rejuvenating Iron and Herb Juice, Hostetter's Stomach Bitters, Kudros, Peruna, Rock-candy Cough Cure.

2. There is no drug that will reduce the chlorid of sodium in the blood and urine, as the chlorid content of the blood and urine is dependent exclusively on the sodium chlorid or the hydrochloric acid given by mouth. Practical measures, therefore, for restricting the sodium chlorid excretion are to restrict the use of table salt to a minimum and not to give any hydrochloric acid as a stomachic. In epilepsy, a very good plan, and one that is commonly adopted, is to replace the sodium chlorid by sodium bromid. This can conveniently be done by placing a saltcellar containing sodium bromid at the disposal of the epileptic patient. The substitution of sodium bromid for sodium chlorid answers a double purpose. In the first place, it withholds sodium chlorid, and, in the second place, the bromin seems to facilitate the excretion through the bowel and the urine of accumulated sodium chlorid.

3. Cacodylate of soda is presumably the best symptomatic remedy for the treatment of chorea. It should be given in large doses, hypodermically. A very good mode of administering it is to inject half a Pravaz syringe full of a solution containing half a grain to the ounce, every four hours until the choreiform movements stop. Astonishing results are frequently witnessed within 24 hours. Effects of arsenic poisoning rarely become manifest. The attention should be called to the fact that the breath will assume a very strong odor of garlic very soon after the administration of the first dose.

CONTRACT PRACTICE.

KANKAKEE, ILL., March 19, 1906.

To the Editor:—In THE JOURNAL, March 17, page 824, I note communication by Dr. G. E. Holtzapple, York, Pa., and as a partial answer to his questions and acting on your suggestion, I submit the action taken by the Kankakee Physicians' Club in such matter. The following resolutions are self explanatory:

Resolved, That on and after the date of the passage of this resolution no member of this society shall accept the position of club, society or organization, company or corporation physician, or agree to continue to do any medical or surgical work for any club, society or organization, company or corporation, at a less rate than the regular or customary charges for like services rendered by other physicians, members of this club, for patients not members of such club, society or organization, company or corporation, and also that in no case shall any physicians agree to attend the families of the members of such club, society or organization, company or corporation at a less price than the regular rate of fee as fixed by this club.

Provided, however, that nothing in this resolution shall be construed as preventing any member of this club from attending the worthy poor at a less rate or rendering free service if necessary in such cases.

Any violation of this agreement shall be considered unprofessional conduct, and the punishment of any member violating the provisions of this act shall be fixed by the club.

Resolved, That no physician of this club make an examination for old line insurance companies for a less fee than:

For $1,000 or less	$3.00
Over $1,000	5.00
Over $5,000	10.00

Adopted, Feb. 16, 1906. A. L. GAGNON, Secretary.

IS INSOMNIA EVER FATAL?

FLINT, MICH, March 5, 1906.

To the Editor: Do you know of any cases that have ever been recorded in medical literature of persons whose death was caused directly by loss of sleep? Such cases are very rare, and on that account, if any have ever been recorded, one ought to be able to find some account of them. Where would one be most liable to find any literature on the subject? R. W. RUTHERFORD, M.D.

ANSWER.—It would probably be hard to find a reported case of death from sleeplessness absolutely exclusive of all contributing factors. The causes that would prevent sleep would themselves be destructive of life, if continued. It would also be difficult to say that a case of insomnia was absolute. Men have been known to sleep under the most unfavorable conditions, and, it is said, even in the briefest intervals of torture. Apparent sleeplessness, moreover, may exist to a very large extent, in some cases in some forms of insanity, especially the so-called circular type. Patients have been known to go apparently without sleep for days and even weeks at a time without any serious physical consequences. They probably did sleep some, but it could hardly be detected. The amount of sleep required varies greatly with the individual, and it is claimed that some distinguished men have lived for considerable periods with one, two or three hours' sleep out of the twenty-four. These cases, however, were not under conditions satisfactory for physiologic experiments. It has been said that the Chinese have a punishment for criminals which consists in depriving them of sleep until death comes to their relief, but there are no scientific observations of such cases, as far as we are aware, and it would be hard to prevent the means used to cause insomnia from themselves contributing to the fatal result. It can be safely said that there are no recorded satisfactory observations of fatal absolute insomnia.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 17, 1906.

Davis, Wm. B., deputy surg.-gen., relieved from duty as chief surgeon, department of the Columbia, and will proceed to New York City, N. Y., for temporary duty at Medical Supply Depot.

Wolfe, Edwin P., Shockley, M. A. W., Shaw, Herbert G., and Halsell, H. S., asst.-surgeons, relieved from duty in the Philippines Division and ordered to proceed to San Francisco, and on arrival to report by telegraph to the military secretary of the Army for further orders.

Egan, Peter R., surgeon, ordered to report in person to Major General James F. Wade, U. S. Army, president of an Army retiring board at Governor's Island, N. Y., for examination by the board, and on completion of his examination will return to station, Fort Hamilton, N. Y.

Woodson, Robert S., surgeon, leave of absence extended 10 days.

Keefer, Frank R., surgeon, reports on 30 days' leave of absence from date, March 12, 1906.

Davis, William T., asst.-surgeon, on arrival in the United States, will proceed without delay to Washington Barracks, D. C., and report to the commanding officer of the General Hospital at that post for duty with Company "A," Hospital Corps.

Torney, Geo. H., deputy surgeon-general, in addition to his present duties, will, on the retirement of Col. John D. Hall, asst.-surgeon-general, report to the commanding general, Department of California, for duty as chief surgeon of that department, and also assume the duties of Medical Superintendent, Army Transport Service, at San Francisco.

LaGarde, Louis A., Ebert, Rudolph G., Purviance, Wm. E., surgeons, appointed members of a board of medical officers to meet at the call of the president thereof, at Manila, P. I., for the examination of such officers of the Medical Department as may be ordered before it to determine their fitness for promotion or advancement.

The following named officers will report in person on Tuesday, May 8, 1906, to Major Louis A. La Garde, surgeon, president of examining board, Manila, P. I., for examination to determine their fitness for advancement: McAndrew, P. H., first lieutenant; Van Poole, G. McD., first lieutenant; Gosman, Geo. H. R., first lieutenant; Van Dusen, James W., first lieutenant; De Witt, Wallace, first lieutenant; Thornburgh, R. M., first lieutenant; Grubbs, R. B., first lieutenant; Shortlidge, E. D., first lieutenant; Field, Peter C., first lieutenant; Shaw, Herbert G., first lieutenant.

Keefer, Frank R., surgeon, the leave of absence granted in S. O. 50, Department of California, c. s., for 30 days, is extended one month.

Pyles, Will L., asst.-surgeon, left Jefferson Barracks, Mo., with recruits en route to Presidio of San Francisco.

Hallock, H. M., surgeon, sick leave extended 30 days.

Whinnery, Jean C., dental surgeon, ordered from Fort Stevens, Ore., to duty at Fort Columbia, Wash.

Casaday, George H., dental surgeon, ordered, on arrival at San Francisco, to duty at the Army General Hospital, Presidio of San Francisco.

Stone, Frank P., dental surgeon, relieved from duty at the Army General Hospital, Presidio of San Francisco, and ordered to duty at Fort Sam Houston, Texas.

Lauderdale, Clarence E., dental surgeon, relieved from duty at Fort Sam Houston, Texas, and ordered to Manila, P. I., for duty in the Philippines Division.

Rhoades, Rex H., dental surgeon, relieved from duty in the Philippines Division, and ordered to the United States on the first transport after May 3, 1906.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending March 17, 1906.

Dunn, H. A., P. A. surgeon, detached from the naval proving ground, Indian Head, Md., and ordered to the *Princeton*.

Manchester, J. D., asst.-surgeon, detached from the *Princeton* and

Baker, M. W., P. A. surgeon, detached from the Naval Hospital Washington, D. C., and ordered to the Naval Hospital, New York, N. Y.

Chappelear, F. D., acting asst.-surgeon, ordered to the Naval Hospital, Washington, D. C.

Langhorne, C. D., surgeon, detached from the *Denver* and ordered home to wait orders.

Lumsden, G. P., surgeon, detached from the *Olympia*, when put out of commission, and ordered to the *Minneapolis*.

Norton, O. D., surgeon, detached from the *Minneapolis* and ordered home to wait orders.

Plummer, R. W., P. A. surgeon, detached from the naval subrecruiting station, St. Joseph, Mo., and ordered to the *Denver*.

Smith, W. B., asst.-surgeon, detached from the *Olympia*, when put out of commission, and ordered to the *Hancock*.

Cone, I. F., and Flint, J., asst.-surgeons, appointed assistant surgeons, with rank of lieutenant, junior grade, from February 28, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine Hospital Service for the seven days ending March 14, 1906:

Wickes, H. W., P. A. surgeon, granted leave of absence for two days, from March 16, 1906.

King, W. W., P. A. surgeon, granted leave of absence for one month, from March 12, 1906.

Goldberger, Joseph, P. A. surgeon, granted leave of absence for twenty-one days, from April 11, 1906.

Amesse, J. W., P. A. surgeon, directed to proceed from Ellis Island, N. Y., to New Orleans, for special temporary duty in the state of Louisiana.

Burkhalter, J. T., P. A. surgeon, granted extension of leave of absence for ten days from March 2, 1906.

Boggess, J. S., asst.-surgeon, granted three days' leave from March 12, 1906.

Rucker, W. G., asst.-surgeon, relieved from temporary duty at Vineyard Haven, Mass., and directed to proceed to New Orleans, for special temporary duty in the State of Louisiana.

Smith, F. C., asst.-surgeon, directed to proceed from Detroit to New Orleans, for special temporary duty in state of Louisiana.

Goldsborough, B. W., acting asst.-surgeon, granted two days' leave of absence, from March 14, 1906.

Richardson, N. D., acting asst.-surgeon, granted leave of absence for thirty days, from March 7, 1906.

Stephenson, Chas. W., Pharmacist, granted leave of absence for thirty days, from March 12, 1906.

BOARDS CONVENED.

A board of medical officers was to meet at the Bureau, Washington, D. C., April 2, 1906, to determine the fitness for promotion to the grade of surgeon of certain passed assistant-surgeons. Detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon-General J. M. Eager and Surgeon L. L. Williams, recorder.

A board of medical officers was to meet at Mobile, Ala., March 17, 1906, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: P. A. Surgeon Edward Francis, chairman; Acting Assistant Surgeon A. S. Taylor, recorder.

A board of medical officers was to meet at Chicago, March 13, 1906, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: P. A. Surgeon G. B. Young, chaiman; P. A. Surgeon S. B. Grubbs, recorder.
ordered home to wait orders.

A board of medical officers was to meet at the Bureau, Washington, D. C., March 15, 1906, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Assistant Surgeon-General J. W. Kerr, chairman; Assistant Surgeon J. W. Trask, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 16, 1906.

SMALLPOX—UNITED STATES

California: Los Angeles, Feb. 24-March 3, 5 cases; San Francisco, 6 cases, 1 death.
Delaware: Wilmington, March 3-10, 1 case.
Florida: Jacksonville, Feb. 24-March 10, 17 cases.
Georgia: Augusta, March 5-12, 1 case.
Louisiana: New Orleans, March 3-10, 20 cases.
Maryland: Baltimore, March 3-10, 6 cases.
Massachusetts: Somerville, March 3-10, 1 case.
Michigan: Detroit, March 3-10, 3 cases.
Mississippi: Natchez, Feb. 24-March 3, 2 cases.
Missouri: St. Louis, March 3-10, 4 cases.
North Dakota: Grand Forks County, Jan. 1-31, 1 case; McHenry County, 29 cases; Nelson County, 6 cases; Ward County, 1 case.
Ohio: Cincinnati, March 2-9, 8 cases.
Tennessee: Memphis, Feb. 24-March 3, 3 cases; Nashville, March 3-10, 1 case.
Utah: Salt Lake City, Feb. 24-March 3, 16 cases.

SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, Jan. 21-Feb. 11, 13 cases, 3 deaths.
China: Hongkong, Jan. 27-Feb. 3, 2 cases, 2 deaths.
Ecuador: Guayaquil, Feb. 4-18, 10 deaths.
France: Paris, Feb. 17-24, 9 cases, 1 death.
Great Britain: Bristol, Feb. 17-24, 1 case; Leeds, Feb. 19-26, 1 case.
India: Bombay, Feb. 6-13, 9 deaths; Calcutta, Jan. 27-Feb. 3, 143 deaths; Karachi, Feb. 4-11, 12 cases, 1 death; Madras, Feb. 3-9, 22 deaths; Rangoon, Jan. 27-Feb. 3, 40 deaths.
Italy: General, Feb. 8-22, 40 cases.
Netherlands, The: Rotterdam, Feb. 17-24, 1 case.
Russia: Moscow, Feb. 3-10, 16 cases, 2 deaths; Odessa, Feb. 10-17, 3 cases, 3 deaths; St. Petersburg, March 3-17, 15 cases, 2 deaths.
Spain: Barcelona, Feb. 10-20, 8 deaths.
Turkey: Alexandretta, Feb. 10-17, 20 cases, 4 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Jan. 21-Feb. 11, 19 cases, 6 deaths.
Ecuador: Guayaquil, Feb. 4-18, 17 deaths.
Honduras: Puerto Cortes, March 13, 1 case.
Mexico: Merida, Feb. 18-24, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, Jan. 6-20, 4 cases, 4 deaths; Provinces, 336 cases, 249 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Jan. 27-Feb. 3, 57 deaths; Rangoon, 2 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, Jan. 6-20, 2 cases, 2 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Jan. 21-Feb. 11, 10 cases, 3 deaths.
China: Hongkong, Jan. 27-Feb. 3, 5 cases, 5 deaths.
India: Bombay, Feb. 6-13, 121 deaths; Calcutta, Jan. 27-Feb. 3, 31 deaths; Karachi, Feb. 4-11, 9 cases, 6 deaths; Madras, Feb. 3-9, 13 deaths; Rangoon, Jan. 27-Feb. 3, 25 deaths.
Peru: Callao, Jan. 26-Feb. 12, 1 case; Chicama Valley, Feb. 14-21, 1 case; Chilcayo, Jan. 26-Feb. 12, 5 cases, 1 death; Choisica, 3 cases, 2 deaths; Mansefu, Feb. 14-21, present; Moche, 1 case; Mollendo, Jan. 26-Feb. 12, 4 cases, 3 deaths; Trujillo, 16 cases, 10 deaths.

Book Notices

URIC ACID. The Chemistry, Physiology and Pathology of Uric Acid and the Physiologically Important Purin Bodies, with a discussion of the Metabolism in Gout. By F. H. McGrudden. Paper. Pp. 318. Price, $2.50 net. Cloth, $3.00 net. New York: Paul B. Hoeber.

This little volume from the laboratory of physiology and chemistry of the Harvard Medical school, constitutes the most complete literary review of the uric acid question that so far has been published. The pure chemistry of uric acid and of the whole group of purin bodies, the solubility of uric acid and the urates, the physiology of uric acid, including its formation and decomposition in the body, the effects of drugs on the excretion and solubility of uric acid, and finally, its pathology and metabolism in gout and lithemia, are all very carefully discussed. The facts collected, therefore, represent practically all that is known in regard to the uric acid subject, and the author deserves immense credit for his diligent search through innumerable publications for the material that forms the basis of his book.

The conclusions that the author draws from his collected data, including some experiments of his own are, on the whole, sound. His avowed purpose is to rely on the arrangement of the facts themselves to bring out the explanation of the phenomena. This is a good plan, so far as it goes, but, unfortunately, the large and valuable field of clinical experience, or what may be called empiricism, especially in regard to the therapeutics of uric acid disorders, is not sufficiently included in the calculation. While we agree with the author that "rheumatic diseases and uric acid metabolism do not at the present time seem to be closely related," and while we indorse heartily his severe arraignment of Haig's theories and the many fallacies and inconsistencies inherent in the irrational use of many so-called uric acid remedies, we nevertheless can not without qualification endorse the statement that "the facts of chemistry and physiology do not furnish any scientific evidence for the alkali therapeutics of gout," nor can we agree with him when he says that uric acid is not an antecedent of urea in the destructive metabolism of proteids; for it most assuredly is at least one of the intermediary bodies between albumin and urea.

Particularly valuable is the chapter on the uric acid solvents; for the author shows most conclusively that most of them, in the very nature of things, are inert and useless. First, because uric acid can not be accused of producing the protean array of symptoms summarized under the name of uric acid diathesis, and, second, because these various remedies could not exercise appreciable effect either on the uric acid excretion or its precipitation in the tissues, even if uric acid were the *fons et origo malorum*.

The book is an exceedingly useful volume for both reference and connected reading; it is critical, but just, and should help clear up the mist of theory and false conceptions that obscure so densely our understanding of uric acid metabolism and of its significance, or etter, lack of significance, in pathogenesis.

GALVANIC, FARADIC AND SINUSOIDAL APPARATUS. Pp. 132. Illustrated. For free distribution. Chicago: R. V. Wagner Company, 1906.

This is practically a catalogue, but besides a list of apparatus it contains much information of value to physicians interested in electrotherapeutics, information that evidently is furnished by one who thoroughly understands the subjects.

MATERIA MEDICA, PHARMACY AND THERAPEUTICS, Including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, Minute Directions for Prescription Writing and Avoiding Incompatibility, also the Antidotal and Antagonistic Treatment of Poisoning. By S. O. L. Potter, A.M., M.D., M.R.C.P. Tenth Edition. Revised and in greater part rewritten. Cloth. Pp. 914. Price, $5.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

This edition has been largely rewritten to conform to the new Pharmacopeia; many new articles have been added and material considered obsolete or of slight importance has been omitted. The new matter includes a list of incompatibles for each drug, as well as descriptions of many comparatively new drugs, chiefly synthetics, which makes the book more valuable for practicing physicians. The articles on acetanilid, acetphenetidin, acids, alkalies, animal extracts and several standard drugs have been rewritten. The general arrangement of the subjects is the same as in previous editions.

A MANUAL OF MATERIA MEDICA AND PHARMACOLOGY, Comprising all Organic and Inorganic Drugs which are or have been official in the United States Pharmacopeia, together with Important Allied Species and Useful Synthetics. Especially Designed for Students of Pharmacy and Medicine, as well as for Druggists, Pharmacists and Physicians. By D. M. R. Culbreth, Ph.G., M.D. Fourth Edition, Enlarged and Revised, with 487 Illustrations. Cloth. Pp. 976. Price, $4.75. Philadelphia: Lea Brothers & Co., 1906.

The popularity of Professor Culbreth's work is evidenced by the fact that four editions of the book have appeared within the last nine years. As a compendium of materia medica and pharmacology it will be found most useful to the student, both of pharmacology and of medicine, as well as to the practicing pharmacist or physician. It is concise and comprehensive and can be commended to physicians who desire a work of this character.

MEMORANDA ON POISONS. By T. H. Tanner, M.D., F.L.S., Tenth Revised Edition. By H. Leffmann, A.M., M.D. Cloth. Pp. 177. Price, 75c. Philadelphia: P. Blakiston's Son & Co., 1905.

New matter has been inserted in this edition of Tanner's manual without materially increasing the size of the book, which is convenient for carrying in the pocket. The subjects of general toxicology, corrosive poisons, simple irritants, specific irritants and neurotic poisons, including narcotics, anesthetics, intoxicants and drugs producing delirium, convulsions, paralysis and asphyxia are considered and the antidotes given.

State Boards of Registration

COMING EXAMINATIONS.

GEORGIA Medical Examining Board (Regular), the Capitol, Atlanta, first week in April. Secretary, E. R. Anthony, Griffin.

UTAH State Board of Medical Examiners, Salt Lake City, April 2. Secretary, R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, April 2-3. Secretary, Ancil Martin, Phoenix.

CALIFORNIA Board of Medical Examiners, San Francisco, April 2-3. Secretary, Charles L. Tisdale, San Francisco.

IDAHO State Board of Medical Examiners, Pocatello, April 3. Secretary, J. D. Conant, Jr., Genesee.

MONTANA Board of Medical Examiners, Senate Chamber, the Capitol, Helena, April 3. Secretary, William C. Riddell, Helena.

NORTH DAKOTA State Medical Examining Board, Grand Forks, April 3. Secretary, H. M. Wheeler, Grand Forks.

OHIO Board of Registration and Examination, State House, Columbus, April 3. Secretary, D. N. Kinsmann, Columbus.

MINNESOTA State Board of Medical Examiners, State Capitol Building, St. Paul, April 3-5. Secretary, O. E. Linjer, Minneapolis.

MISSOURI State Board of Health, Kansas City, April 3-5. Secretary, J. A. B. Adcock, Warrensburg.

RHODE ISLAND State Board of Health, State House, Providence, April 5. Secretary, Gardner T. Swarts, Providence.

ARKANSAS State Board Medical Society, Little Rock, April 10. Secretary, J. P. Runyan, Little Rock.

MISSOURI State Board of Health, St. Louis, April 10-12. Secretary, J. A. B. Adcock, Warrensburg.

WEST VIRGINIA State Board of Health, Parkersburg, April 10-12, Secretary, H. A. Barbee, Point Pleasant.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, D. C. April 12. Secretary, William C. Woodward, Washington, D. C.

ILLINOIS STATE BOARD OF HEALTH, Great Northern Hotel, Chicago, April 18-20. Secretary, J. A. Egan, Springfield.

Arkansas Report Correction.—The report of the examination held at Little Rock, in January, 1906, in THE JOURNAL, Feb. 10, 1906, page 455, implies that a graduate of Tufts Medical College and of the American Medical College failed. This applicant was a graduate of the American College of Medicine and Surgery, having attended Tufts for three years and the college from which he graduated for one year.

Nebraska February Report.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Feb. 7-8, 1906. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 8, of whom 3 passed and 5 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
College of P. and S., Chicago	(1905)	77.1
Barnes Med. Coll.	(1905)	75.
Eclectic Med. Inst., Cincinnati	(1872)	89.2
FAILED.		
University of Nebraska	(1905)	61.1, 62.7, 72.7
Central Med. Coll., St. Joseph	(1905)	64.3
Kansas City Homeo. Med. Coll.	(1904)	68.2

Pennsylvania Medical Examiners Appointed.—Governor Pennypacker has appointed the following men members of the State Medical Examining Board: Dr. Francis R. Packard, Philadelphia, editor of the *American Journal of Medical Sciences*, is appointed to take the place of the late Dr. Hiram McConnell, New Brighton. Dr. Henry Beates, Jr., Philadelphia, was reappointed. Dr. W. O. Keffer, Altoona, and Dr. S. J. H. Louther, Somerset, were appointed in the places of Dr. C. W. Ewing, Harrisburg, and Dr. L. P. O'Neal, Mechanisburg.—The following men were appointed by Governor Pennypacker on the Homeopathic Medical Examining Board: Gustave A. Mueller, Allegheny; C. S. Middleton, Philadelphia; H. M. Bunting, Norristown.

Pennsylvania December Regular Report.—The State Medical Society of Pennsylvania reports the written examination, held at Philadelphia and Pittsburg, Dec. 12-15, 1905. The total number of applicants examined was 107, of whom 77 passed and 30 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Jefferson Med. Coll.	(1904) 75, 80.9, 86.2;	(1905) 76.5, 78.5, 78.7, 79.7, 81.2, 81.8, 82.7, 84.3, 85.1.
Medico-Chirurgical Coll., Philadelphia,	(1898) 89.5;	(1902, 83.6; (1903) 82.9; (1904) 75; (1905) 75, 76.7; 77.4, 77.8, 78.2, 78.6, 80.
Woman's Med. Coll., Philadelphia	(1903) 80;	(1905) 78.
Howard University	(1902) 80.5;	(1904) 81.5; (1905) 75.5
University of Edinburgh		(1905) 76.8
University of Florence, Italy		(1899) 75.
University of Kentucky		(1905) 77.1
Western University of London, Canada		(1905) 76.4
College of P. and S., Baltimore	(1904) 77.5;	(1905) 75, 75.1
University of Pennsylvania,	(1883) 89.7;	(1902) 81.5; (1903) 78.9, 80.7, 82.8; (1904) 79.2, 81.6, 82.9, 83.8, 87.6; (1905) 78.9, 87.3, 88.2.
Eclectic Med. Inst., Cincinnati		(1880) 77.5
Johns Hopkins University	(188) 84.2;	(1902) 87.9
University of Louisville		(1894) 85.4
University of Maryland	(1903) 77.3;	(1905) 78.5
Harvard Med. Coll.	(1902) 88.9;	(1903) 80.5
Kentucky School of Med.		(1905) 75.1
Baltimore University		(1901) 75.2
University of Virginia		(1904) 83.
Georgetown University, Washington		(1899) 84.3
Western Pennsylvania Med. Coll.	(1904) 78.9;	(1905) 76.4, 80.2
University of Naples, Italy,	(1896) 77.2;	(1901) 78; (1902) 75.
Baltimore Med. Coll.,	(1903) 77.2;	(1905) 76.6, 79.5, 85.8
University of Ohio		(1893) 76.2
University of Tennessee		(1903) 76.3
University and Bellevue Hosp. Med. Coll.		(1904) 84.7
Columbian University		(1901) 84.7
University of the South		(1904) 77.3
Medical College of Virginia		(1905) 82.3
University of Cincinnati		(1905) 75.
FAILED.		
Medico-Chirurgical College, Philadelphia,	(1903) 65;	(1904) 47.9; (1905) 64.4, 70, 72.1.
Louisville Med. Coll.	(1905)	72.8
University of the South	(1903) 71;	(1904) 72.3, 73.5
Rush Med. Coll.	(1904)	72.4
Coll. of P. and S., Baltimore	(1905) 60.6,	71.6, 71.9
Maryland Med. Coll.	(1903) 66;	(1905) 52.4, 61.1
Howard University	(1903)	58.7
Ohio Med. University	(1905)	65.5
Western Pennsylvania Med. Coll.	(1904) 68, 71.6;	(1905) 68.7
Starling Med. Coll.	(1898)	71.1
University of Turin, Italy	(1896)	68.4
University of Kentucky		*71.5
George Washington University	(1902)	71.7
Jefferson Med. Coll	(1905)	71.1, 71.7
National University	(1893)	67.8
Kentucky School of Med.	(1904)	41.2
Baltimore University	(1904)	73.4

* Year of graduation not given.

Pennsylvania Homeopathic Report for December.—The Homeopathic Medical Society of Pennsylvania reports the written examination held at Philadelphia, Dec. 12-15, 1905.

The total number of applicants examined was 10, all of whom passed. The following colleges were represented:

College.	PASSED. Year Grad.	Per Cent.
Hahnemann Med. Coll., Philadelphia, (1903) 80.8; (1904) 88.5; (1905) 75.4, 75.8, 77.2, 78.4, 87.7.		
University of Wooster	(1893)	82.4
Boston University	(1902)	89.8
New York Homeo. Med. Coll.	(1899)	95.4

Pennsylvania Eclectic Report for December.—The Eclectic Medical Society of Pennsylvania reports the written examination held at Harrisburg, Dec. 12-15, 1905. The total number of applicants examined was 8, all of whom passed. The following colleges were represented:

College.	PASSED. Year Grad.	Per Cent.
Maryland Med. Coll.	(1905)	88.4
Royal University, Palermo	(1899)	75.
American Coll. of Med. and Surg.	(1903)	88.1
University of the South	(1899)	78.3
College of P. and S., Baltimore	(1904)	84.9
Western Pennsylvania Med. Coll.	(1896)	83.3
University of Modena, Italy	(1903)	78.0
University of Naples, Italy	(1894)	78.8

Utah January Report.—Dr. R. W. Fisher, secretary of the State Board of Medical Examiners of Utah, reports the written examination held at Salt Lake City, January, 1906. The number of subjects examined in was 19; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 3, all of whom passed. The following colleges were represented:

College.	PASSED. Year Grad.	Per Cent.
University of Michigan	(1904)	79.7
Marion-Sims Beaumont Med. Coll.	(1904)	*76.5
Jefferson Med. Coll.	(1904)	84.2

* Second examination.

Virginia, New Board of Medical Examiners.—The governor has appointed the following members of the State Board of Medical Examiners to serve for four years: Drs. Willard B. Robinson, Tappahannock; Herbert M. Nash, Norfolk; Junius E. Warrinner, Brook Hill; William W. Wilkinson, La Crosse; Richard S. Martin, Stuart; Samuel Lile, Lynchburg; Robert C. Randolph, Boyce; Robert M. Slaughter, Theological Seminary; Elliott T. Brady, Abingdon, and Charles W. Rodgers, Staunton; and state at large, Drs. Rawley W. Martin, Lynchburg; A. S. Priddy, Bristol, and R. Bruce James, Danville.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Boston, June 5-8.

Medical Association of the District of Columbia, Washington, April 3.

Tennessee State Medical Association, Memphis, April 10.

Medical Association of the State of Alabama, Birmingham, April 17.

Medical Society of the State of California, San Francisco, April 17-19.

Medical Association of the District of Columbia, Washington, April 3.

Florida Medical Association, Gainesville, April 18.

Medical Association of Georgia, Augusta, April 18.

Mississippi State Medical Association, Jackson, April 18.

South Carolina Medical Association, Columbia, April 18.

State Medical Association of Texas, Fort Worth, April 24-26.

Arizona Medical Association, Phoenix, April 24-25.

Medical and Chirurgical Faculty of Maryland, Baltimore, April 24-26.

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Regular Meeting of the Section on General Medicine, held Feb. 12, 1906.

DR. WILLIAM E. HUGHES in the Chair.

Chronic Valvular Disease.

DR. FREDERICK J. KALTEYER exhibited a patient whose case was interesting on account of the sudden onset of the symptoms, the very loud diastolic murmur which could be heard over the entire trunk and often three feet away from the body, and the very slight arterial phenomena. Following the ingestion of a large quantity of beer one of the heart valves ruptured.

DISCUSSION.

DR. J. ALISON SCOTT said that it was unusual for rupture of a valve to occur, except under great muscular strain. In this case the increased blood tension probably was produced by the alcohol.

DR. JAMES M. ANDERS said that rupture of normal heart valves was not frequent, and that it would be interesting to know whether or not the man had had a previous valvular lesion. Under those circumstances rupture would be more likely to occur, and in two instances in his experience had occcurred, on slight muscular exertion.

DR. WILLIAM E. ROBERTSON said that in his experiments in the taking of blood pressure he had found that a good dose of alcohol would bring about a lowering of the blood pressure. In one instance in which the blood pressure was 115 it fell to 95 in twenty minutes after the giving of an ounce and a half of alcohol. He thought it possible that in this instance the enormous amount of fluid taken would increase the blood pressure and in that way throw extra work on the heart. In myocardial conditions the blood pressure is often very high when it would be supposed to be low. He believes that some other factor than the muscular pressure itself accounts for these variations in tension. This he thinks is explained by the retention of poisons in the system which have a vaso-constrictive effect.

Hysterical Neuroses of the Stomach.

DR. J. HENDRIE LLOYD exhibited a patient with a rare and curious hysterical condition of the stomach and abdomen. It was somewhat like the disease noted by French authors called "Rhythmical Borborygmi." The patient, who was hysterical, has o loud rumbling to and fro sound in the abdomen, probably caused by the passage of air to and fro either in the stomach or transverse colon, and this is produced by a rhythmical movement of the abdominal muscles. The condition came on during convalescence from typhoid; was unattended by pain, nausea or any evidence of organic disease. Dr. Lloyd reviewed briefly some of the more important and rare hysterical conditions of the abdominal organs, among which especially were anorexia nervosa and hysterical merycism, or chewing of the cud in the human subject, a condition which has been observed especially in neurotics, as in insane patients, idiotic and epileptic children, etc., and also in neurasthenics. Among other diseases referred to was phantom tumors, false pregnancies, so called, all of which are seen sometimes in hysterical subjects. The paper emphasized the fact that there is still a wide field for the purely medical clinician in diseases of the stomach, all of which diseases the physician is not yet ready to resign to the surgeon.

DISCUSSION.

DR. JAMES M. ANDERS believed the case could not be anything else than a neurosis. Tending to this opinion were the facts of the typically hysterical appearance of the patient, and that when breathing and the motion of the diaphragm were arrested the noise ceased. It was evidently not due, therefore, to an independent peristaltic action of the stomach. That the diaphragm should make the peculiar noise in a normal stomach was difficult of explanation. An hour-glass contraction of the stomach was suggested as an explanation. It was thought possible that the diaphragm in forcing air and fluid through a narrow opening caused some noise; and, naturally, with retraction of the diaphragm and relaxation of the stomach there would be a regurgitation into the cardiac end.

DR. J. ALISON SCOTT thought that from the character of the noise there must be both air and fluid concerned in the noise. He suggested the existence of a partial obstruction at the pyloric end of the stomach, or along the curvature of the stomach. He thought either possibility could be easily demonstrated by an inflation of the stomach.

DR. A. O. J. KELLY said the case appeared to be some stomach condition in a hysterical subject. He referred to a patient who had been subjected to abdominal operations and had, following the third, developed a stomach condition manifested by air regurgitation, and vomiting coming on two, three or more times daily. She had been under various treatments and ultimately was operated on on the supposition of the presence of adhesions near the pylorus. These were found, and with their removal the regurgitation of food ceased promptly.

DR. S. SOLIS-COHEN thought that there seemed to be a large hysterical element in association with the respiratory tract rather than with the stomach. He thought it would be of

interest to know whether with the passage of the stomach tube there was any escape of gas. In an hour-glass stomach which he had seen there had been contraction in an unusual direction, and he wondered whether there could be such a condition in the present case. Personally, he did not believe the condition was a surgical one, although he was open to conviction in that direction if the skiagraph should show a lesion.

DR. WILLIAM E. HUGHES said that he had occasionally seen, and especially in neurotics, stomachs whose esophageal opening was normally placed, whose pylorus was where it ought to be, and yet, without any actual increase in the size of the stomach, the lower border was almost down in the pelvis, necessitating a short, sharp bending of the stomach on itself. He thinks it possible that the motion occasioned by the sharply descending diaphragm might be enough to produce such a sound.

In any of the hysterical conditions there should be considered the possibility of cure by operation, and in connection with this two elements must be borne in mind—a hysterical basis and an acquired habit. If by operation the habit can be broken up, the hysteria is at least cured temporarily. A fact too often lost sight of is that there is an anatomic or pathologic basis for hysterical manifestations, such as there was in Dr. Kelly's case. In a certain number of gastric cases there is absolutely no neurosis. A case in point is that of a man over 80 years of age who had for many years regurgitated his food. He was entirely free from neurosis, and in his case the condition was purely the result of habit.

Pulmonary Abscess.

DR. JAMES M. ANDERS AND DR. GEORGE E. PFAHLER presented a man, aged 28, married, an engineer, whose present illness began as typical typhoid fever, the temperature throughout, however, pursuing an intermittent type. At the end of the third week phlebitis affecting the left femoral vein developed and subsided that week. Then a bronchopneumonia appeared and after running its course, the patient developed a lobar pneumonia. Physical examination revealed an area of muffled tympany and cavernous breathing at the angle of the right scapula posteriorly. The abscess cavity attained its maximum size in about seventy-two hours. Three days later, while the patient was sitting up for an examination he developed a severe paroxysm of cough attended with the expectoration of about two ounces of yellow purulent sputum. A microscopic examination showed pus cells, elastic fibers, pneumococci and streptococci. The process was studied by radiograph while the patient was in the supine position and the exposure was made after inspiration. This showed an incomplete consolidation of the right lower lobe with a cavity in its upper portion about two inches in diameter, extending from the upper border of the fifth rib posteriorly to the middle of the second interspace in the mid-scapular line. About ten days later the radiograph showed less evidence of consolidation; the abscess cavity was still of the same size. Eleven days later the cavity was still visible, but was decreased to about its original size, while on the same side the diaphragm had risen to the lower border of the seventh rib. The fact that the diaphragm moved its position upward as compared with its normal position was considered indicative of Nature's process of assisting mechanically in closing an abscess cavity of the lungs. Operative interference had been seriously considered when the fortunate accident occurred leading to the discharge of the pus through a bronchus. After this the general and local symptoms steadily subsided until the necessity for operation no longer existed and convalescence was gradually established.

Recent Therapeutic Experiences with Pneumonia.

DR. S. SOLIS COHEN recently tested in a selected case the value of enormous doses of quinin in pneumonia. The patient was a young robust man admitted to the hospital shortly after his initial chill, still showing some crepitant râles, with bronchial breathing and temperature of about 103. Dr. Cohen gave him 15 grains of quinin every two hours, with the direction that it be continued until there was some sign of quinin poisoning. The man took 105 grains without effect, except a reduction of temperature. In the course of thirty-six hours he was found to be in good condition, with the physical signs increased, but the fever gone. The pulse was very quiet, the breathing easy and the patient was feeling comfortable. The quinin was continued, in doses of about 50 grains a day, for two or three days, at the end of which time the physical signs began to show a beginning of resolution and the patient went on to recovery, without a crisis. There had been a gradual fall of temperature from 103 to normal.

Dr. Cohen also reported his results in the employment of colloidal silver in the treatment of endocarditis and in associated forms of sepsis. In a case of bronchopneumonia in a child, with pronounced meningeal symptoms, the remedy was used by the rectum and afterward applied in ointment over the neck, giving relief to the patient. In a case of lobar pneumonia following bronchopneumonia recovery took place. In that case also the symptomatic recovery preceded the disappearance of the physical signs. Dr. Cohen is convinced of the great value, in the treatment of pneumonia, of keeping the windows of the room in which the patient is sleeping open all the time, the bed being protected from the draft. An advantage in the administration of the colloidal silver is that as it is not given by the stomach, it need not interfere with other treatment.

Dr. Cohen does not know the action of the colloidal silver, but ventured the opinion that it renders the tissues less favorable as a culture medium, and that, to a degree, it favors the destruction of toxins. The dose usually employed by him by the rectum is from 2 to 5 grains; or the solution of from 2 to 5 grains in from one-half to 2 ounces of water. For intravenous use care should be taken to secure a specimen which has been well cared for by the apothecary. In pneumonia he has used the silver in suppositories containing 30 minims of a 2 per cent. solution.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Acute Catarrhal Conjunctivitis.

In the treatment of acute catarrhal conjunctivitis, according to J. H. Kincaid in *Southern Jour. of Med. and Surgery*, cleanliness is of the greatest importance. The eyes should be thoroughly cleansed every hour or even more frequently if much discharge is present. This should be done with a saturated solution of boric acid (4 per cent.).

Cold compresses applied locally are of service, unless a corneal ulcer is present. Especially is cold of value when there is much swelling of the lids. A small ice-bag may be used instead of the compresses. Kincaid states that some authors recommend silver nitrate in the strength of 2 to 5 grains (.12-.30) to the ounce (30.), applied locally to the everted lids.

The eyes should never be bandaged, nor should poultices be applied to them. The patient should not be allowed to use the eyes and should wear dark glasses as a protection from the light, wind and dust. Temperate habits and proper hygiene must be insisted on by the physician.

Earache.

As soon as a patient complains of a severe earache, according to Bardes in *Med. Record*, it must be realized that a septic process is present, which may reach a dangerous state if left unchecked. The patient, therefore, should be kept quiet, put to bed and placed on a liquid diet. The bowels must be kept freely open. Opiates may be given, if necessary, to insure rest and comfort, but should be used with caution. Dry heat or an ice-bag should be applied to the ear. Heat, as a rule, is preferable to the patient. Every three hours the ear should be irrigated gently with a hot solution of bichlorid of mercury in strength of 1 to 5,000, followed by a few drops of a carbolic acid solution in glycerin instilled into the ear.

Bardes condemns the practice of applying an onion, an oil or a tincture to the external meatus, as being uncleanly and in many cases harmful. Under no circumstances should the patient be allowed to suffer longer than twenty-four hours; and if the pain continues and the drumhead is swollen, inflamed and distended, surgical procedures should be resorted to without delay. The drumhead should be thoroughly incised and treated in the same way as any other septic formation. When the tympanic membrane is incised freely and not simply punctured, instant relief is given the patient, dangerous complications are prevented and recovery is hastened. The author recommends a hypodermic injection of morphin or a whiff of chloroform or nitrous oxid, when the drum may be freely incised with but little pain. In all cases, symptoms of extension to the mastoid cells must be watched for. The symptoms of mastoid involvement are tenderness over the mastoid region and sagging of the posterior superior wall of the canal.

Edema of Glottis in Children.

The following combination is recommended by *Bul. gen. de Ther.* as a spray to relieve the edema of the glottis in children and infants:

℞. Aluminis
Acidi tannici, āā ..... gr. xv 1
Ext. krameriæ ..... ʒss 2
Aquæ ..... ʒiiiss 105

M. Sig.: To be used in the atomizer as a spray to the throat five or six times a day.

Chapped Hands.

The following combination is recommended as a valuable local remedy in the treatment of chapped hands:

℞. Sodii salicylatis ..... ʒi 4
Balsami peruviani ..... ʒiv 15
Glycerini ..... ʒiss 45
Aquæ rosæ ..... ʒvi 180

M. Ft. lotio. Sig.: To be applied to the hands night and morning.

Hydrocyanic Acid.

Hydrocyanic acid is an old-time preparation, used as an antispasmodic in the various forms of reflex vomiting. It has also been used in many other conditions of nervous origin such as the cough due to disturbances of the heart and in asthma. It is a most efficient sedative to the gastric mucous membrane in such conditions as gastralgia, ulcer and carcinoma, and is regarded as a satisfactory sedative in cases of pruritus. Beasley recommends the following combinations containing dilute hydrocyanic acid:

In dry irritable coughs:

℞. Acidi hydrocyanici dil ..... m. iii 20
Vini ipecacuanhæ ..... m. v 30
Syr. tolutani ..... ʒss 2
Aquæ anisi q. s. ad ..... ʒii 8

M. Sig.: To be taken at one dose; the dose to be repeated every four hours.

In gastric irritability:

℞. Acidi hydrocyanici dil ..... m. iii 20
Liquoris bismuthi ..... ʒss 2
Sodii bicarb ..... gr. xx 1 30
Liq. morphinæ acetatis (1 p. c.)
Spts. chloroformi, āā ..... m. viii 50
Aquæ menth. pip q. s. ad ..... ʒi 30

M. Sig.: One such dose every four hours.

To allay vomiting, the following combination is useful:

℞. Acidi hydrocyanici dil ..... m. iv 25
Potassii bicarb ..... gr. xx 1 30
Spts. ammon. arom ..... m. xv 1
Liquoris bismuthi ..... ʒss 2
Aquæ chloroformi q. s. ad ..... ʒi 30

In pruritus, the following is of value:

℞. Acidi hydrocyanici dil ..... ʒi 4
Liquoris plumbi dil. q. s. ad ..... ʒviii 240

M. Ft. lotio. Sig.: Apply locally to allay the itching on the unbroken skin. Or:

℞. Acidi hydrocyanici ..... ʒss 2
Liq. plumbi fort ..... ʒi 4
Acidi carbolici liq ..... m. v 30
Aquæ q. s. ad ..... ʒii 60

M. Ft. lotio. Sig.: To be painted thinly over the irritable parts where the skin is unbroken.

[The foregoing should not be applied on mucous membranes nor on broken skin.]

In laryngismus stridulus:

℞. Acidi hydrocyanici dil ..... m. i 06
Spts. ammon. arom ..... m. viii 50
Tinct. hyoscyami ..... m. iv 25
Syr. aurantii ..... m. xv 1
Aquæ anisi q. s. ad ..... ʒii 8

M. Sig.: One such dose every four hours.

In spasmodic asthma:

℞. Acidi hydrocyanici dil ..... m. iv 20
Creosoti ..... m. i 06
Mucil. acaciæ ..... ʒss 2
Aquæ cinnamomi q. s. ad ..... ʒiv 15

M. Sig.: One tablespoonful at once and repeat the dose at the end of an hour if not relieved.

In gastralgia with vomiting:

℞. Acidi hydrocyanici dil ..... m. iii 20
Creosoti ..... m. i 06
Liq. morph. hydrochlor. (1 p. c. B. P.) m. xx 1 30
Sodii bicarb.
Mucil, acaciæ, āā ..... ʒss 2
Aquæ dest. q. s. ad ..... ʒi 30

M. Sig.: Two tablespoonfuls at a dose and repeated in four hours if necessary.

Uremia with Coma.

The following outline of treatment is recommended by H. J. Smith in *Med. Bull.* in the treatment of uremic coma: When the heart's action is feeble and accompanied by high arterial tension, nitroglycerin may be given hypodermically in doses of grain 1/100 (.0006), alternating with strychnia given in doses of grain 1/40 (.0015) each. The patient is placed in a hot pack and cold applied to the head. In conjunction with the hot pack, pilocarpin hydrochlorate may be given hypodermically in doses of grain 1/12 (.005) each to promote free diaphoresis and thus to aid in eliminating large amounts of urea.

Magnesium sulphate, 2 ounces (60.), given by rectum in a pint of warm water and the injection repeated several times, is recommended in order to withdraw large amounts of the serum from the system and thus to reduce arterial tension and to restore consciousness.

The duration of the hot pack must depend on the individual case, lasting from a few minutes to thirty-five or forty minutes, at the end of which time the heart should be observed and stimulants administered if necessary. Elaterin is of service at this stage of the treatment to promote free elimination by the bowels. It is given in doses of grain ⅛ (.008) each, together with large quantities of water if the patient regains consciousness.

As a diuretic the following combination is recommended:

℞. Potassii acetatis ..... ʒiv 15
Infusi digitalis
Infusi buchu, āā ..... ʒvi 180

M. Sig.: One tablespoonful every three hours. Or:

℞. Hydrargyri chloridi mitis
Pulveris scillæ
Pulveris digitalis, āā ..... gr. xx 1 30

M. Ft. pillulæ No. xx. Sig.: One every four hours, and continue for one week.

AFTER-TREATMENT.

The after-treatment consists in giving a saline purge once or twice a week to assist in reducing the edema. For the high arterial tension spiritus glonoini is recommended, given in doses of 1 minim each (.06), three times a day. This may also relieve dyspnea if this is present.

To correct the anemia and to serve as a mild diuretic, Smith recommends liquor ferri et ammonii acetatis in doses to suit the individual case, and continued for several weeks. The diet during the active stage of the trouble should consist principally of milk and broths. After the acute symptoms have subsided lean meats may be allowed such as beef, mutton, lamb, broiled, roasted or stewed; well-cooked fish, green vegetables and stewed fruits.

Chronic X-Ray Burns.

In THE JOURNAL, March 10, 1906, we stated that Mr. Fuchs, a former *x*-ray operator, had used silver nitrate in full strength in chronic *x*-ray burns, with good results. This was an error; we should have stated that he had used C. P. nitric acid full strength.

Medicolegal

Actuality of Mental Suffering Attendant on Physical.

The Supreme Court of Florida, Division A, says, in Western Union Telegraph Company vs. Wells, that the intimate association between mind and body is a matter for discussion among psycho-physiologists; but to the laymen it is clear that a tribunal that allows damages for physical suffering can not deny damages for the mental suffering attendant on the physical. The one is as much an actuality as the other, and just as readily determinable by a jury.

Demonstration Before Jury of Nature of Injuries.

The Court of Civil Appeals of Texas says that during the trial of Missouri, Kansas & Texas Railway Company of Texas vs. Lynch, a personal injury case brought by the latter party, while a physician, the plaintiff's witness, was on the witness stand, the plaintiff's counsel had the plaintiff go around in front of the jury, take off his shoes and socks, and pull up his trousers and underwear, so as to expose his limbs above the knees, and then requested the physician to show the jury and demonstrate the plaintiff's sensibility or lack of sensibility in his limbs. The witness then proceeded as follows: "As I said a while ago, he has a loss of sensation. His feet stay cold all the time. There is no feeling down here. You can pinch it as deep as you want to, and it don't make any difference. There is no sensation whatever. [Here the witness stuck pins into the plaintiff's limbs in various places, and continued the process until the blood was running freely from one place in one limb.] You can light a match there and burn him, if you want. The other is the same as this one [continuing to prick the other limb]. However, the left is a little better leg than the other. He seems to sort of bring it up from the hip and brace himself on it, so he can walk on his crutches. If it wasn't, he could not walk on his crutches." Then (turning to the jury): "If you would like for me to, I will stick a match under it. He won't have any pain about it at all. It will make a blister, of course." And, while said witness was on the stand, the plaintiff's counsel had the plaintiff to stand up in front of the jury, and requested the witness to remove his crutches. The witness then proceeded to take one crutch from under the plaintiff, leaving the plaintiff standing on the other, and then forcibly removed the latter, allowing the plaintiff to fall nearly to the floor, whereupon the witness, who was a very strong man, caught the plaintiff, raised him up, stood him erect, and then turned him loose and let him fall again, this time, as before, catching him just before he struck the floor. To these proceedings the defendant company objected, on the ground that they were improper and calculated to prejudice the minds of the jury. The objection was overruled and the evidence admitted. The court holds that the evidence was admissible as tending to show the nature and extent of the plaintiff's injuries. It says that this evidence could only have affected the amount of the recovery, and, as there was no complaint made that the verdict (for $12,500) was excessive, the defendant could not have been harmed by its admission. The court also holds that there was no error in admitting the testimony of another physician that in his opinion, from all the history given him of the case and from what he saw about the plaintiff, and the length of time that had elapsed since the injury, it would indicate more the idea of permanency in his condition than not. It says that the witness was a medical expert, and could give his opinion, based on his examination and the history of the case received from the plaintiff. The defendant could, on cross-examination of the witness, have shown that the history of the case received by the witness from the plaintiff was not correct.

Application of Illinois Medical Practice Act.

The Supreme Court of Illinois in the case of People vs. Langdon, wherein it denied a rehearing in February, reverses the decision of the Appellate and Circuit courts. This was an action to recover the penalty for practicing medicine without a license from the State Board of Health, imposed by section 9 of the act in force July 1, 1899, entitled, "An act to regulate the practice of medicine in the state of Illinois, and to repeal an act therein named." The dates of the violations of the act charged were in 1903, without any averment that the defendant began the practice of medicine after July 1, 1899, and it was contended that without that averment no cause of action was stated. Thus the question raised was whether a person who has no license to practice medicine, who began such practice before July 1, 1899, when the present act took effect, and continued such practice thereafter without a license, is subject to the penalties named in section 9.

The Supreme Court says that it is clear that such a person comes within the express language of that section. He is a person who is practicing medicine without a certificate issued by the State Board of Health in compliance with the provisions of the act, and who does not hold an unrevoked certificate from the State Board of Health issued prior to the taking effect of the act. Having no license at all to practice medicine, he is within the terms of the statute and subject to its penalties.

But counsel contended that because section 2 only provided for the granting of licenses to persons entering on the practice of medicine after July 1, 1899, when the act took effect, the only persons subject to the penalties imposed by section 9 were those who began the practice after that date. The Supreme Court, however, does not see how that position can be maintained. It says that the provision of section 2 relied on is as follows: "No person shall hereafter begin the practice of medicine or any of the branches thereof, or midwifery, in this state without first applying for and obtaining a license from the State Board of Health to do so." Taking that section and the other provisions of the act together, they amount to this: Any person desiring to enter on the practice of medicine after the act took effect could only do so after first applying for and obtaining a license from the State Board of Health in compliance with the provisions of the act, and any person practicing medicine without a certificate issued under said act, or an unrevoked certificate issued under previous acts, was subject to certain penalties specified in section 9. The act is penal in character, and is to be strictly construed, but not with such technicality as to defeat its purpose. When the true meaning and intent of the act are apparent, the act is to be given effect in accordance therewith. The proviso excluding persons practicing medicine who hold unrevoked licenses issued by the State Board of Health prior to the taking effect of the present act can not be ignored in interpreting the act, and the proviso would be useless and senseless, if the legislature intended the act to apply only to persons who began the practice of medicine after the act took effect. To say that the legislature intended to grant immunity from prosecution to persons who were unlawfully practicing medicine at the time the act took effect would be wholly unwarranted. On the contrary, an unrevoked license or certificate issued under some previous act was required by the proviso.

In the case of State Board of Health vs. Ross, 191 Ill. 87, the question whether the State Board of Health could revoke certificates issued under a previous act was considered, and it was held that it could not. That decision was in accordance with the language of the act which provided for issuing licenses, and in one sentence provided that the board might refuse to issue a license for certain reasons, and might revoke such license for like causes. The provisions for granting, refusing to grant, or revoking a license under the present act relate only to persons entering on the practice of medicine after the act took effect. But that is an entirely different proposition from the one involved in this case. It does not follow from that decision that one who has no license under the present act or any former act may practice medicine without being subject to the penalties prescribed by section 9.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

March 10.

1 *Experimental Method in Sanitary Science and Sanitary Administration. W. T. Sedgwick, Boston.
2 *Review of Recent Observations on Treponema Pallidum of Syphilis. C. A. Pfender, Washington, D. C.
3 *Litholapaxy vs. Lithotomy. G. K. Swinburne, New York.
4 The Outlook for the Chronic Dyspeptic. M. I. Knapp, New York.
5 *Appendicitis, When to Operate. S. E. Sanderson, Detroit, Mich.
6 *Life Insurance Companies and the Prevention of Tuberculosis. C. L. Greene, St. Paul, Minn.

1. **Sanitary Science and Administration.**—Sedgwick states that comparatively few physicians or sanitarians are in a position to conduct artificial experiments, but that almost any wide-awake observer, whether he be a physician, physiologist, sanitarian or engineer, may, if he will, find going on all about him natural experiments, the conditions of which may often be learned with great accuracy, even after the experiment is completed, and which may yield conclusions quite as capable of verification as are those of experiments made in the laboratory. He pleads for better material on boards of health, claiming that it is time we should cease experimenting with political appointees and begin experimenting with something better than spoilsmen. Too often a hack politician or two, a second-rate physician or two, and one or more vain or place-seeking nobodies—useless but not harmless—make up local boards of health; and as no stream can rise higher than its source the services of such boards are disgracefully small in quantity and poor in quality.

2. **Treponema Pallidum of Syphilis.**—Pfender states that under the international code the present correct name of the organism now almost universally conceded to be the etiologic factor in the production of syphillis is *Treponema pallidum.*

3. **Litholapaxy vs. Lithotomy.**—Swinburne pleads for the more frequent use of litholapaxy, an operation too valuable to be lost. The technic is described and several cases are reported illustrative of the uses and limitations of the operation.

5. **Appendicitis; When to Operate.**—Sanderson believes that the safest general rule is to operate only when general peritonitis is not present. In regard to late operations, he says that no one questions the advisability of evacuating pus. As to the interval of operation, he says that if the attack has been unquestionably an inflammation of the appendix, especially if after-symptoms remain, operation is indicated; but if the symptoms are mild, and clear up entirely after the attack, it is best to await symptoms of an oncoming second attack before operation, in the meantime keeping the patient under observation.

6. **Life Insurance and Tuberculosis.**—Inasmuch as life insurance companies have a vital interest in the prevention of tuberculosis, Greene believes it desirable that the National Association for the Study and Prevention of Tuberculosis should endeavor to bring into active membership the medical directories of life insurance companies and seek to secure the active aid and co-operation of the companies in attempts to secure the passage and enforcement of laws directed to control tuberculosis, whether these relate to the building and maintenance of state or national sanatoriums, or to other vital matters. Arrangements ought to be perfected for the issuance of uniform sets of circulars, giving in plain and simple language such information as will serve to educate the masses, such literature to be printed and circulated by the companies through their agents and their ordinary mail service.

Medical Record, New York.

March 10.

7 Intracranial Lesions as Sequelæ of Chronic Purulent Otitis Media. M. A. Starr, New York.
8 *Mastoiditis in Infants. S. Oppenheimer, New York.
9 Literary Gems from the Medical Essays of Oliver Wendell Holmes. L. E. Blair, Albany, N. Y.
10 *Serum Treatment of Hay Fever. C. H. Knight, New York.
11 *Human Blood Pressure and Pulse as Affected by Altitude. C. F. Gardiner and H. W. Hoagland, Colorado Springs, Colo.
12 Inebriety Often a Form of Moral Insanity. T. D. Crothers, Hartford, Conn.
13 Vaginal Section in Relation to Puerperal Sepsis. J. S. Price, Beaumont, Texas.
14 *Korsakoff's Disease. E. L. Hunt, New York.
15 Open Safety Pin Swallowed by an Infant Six Weeks Old, and Successfully Passed by Bowel Six Days Later. B. Van D. Hedges, Plainfield, N. J.

8. **Mastoiditis in Infants.**—Oppenheimer gives the history of a patient illustrating the condition in which there is absence of prominent symptoms when the antrum is filled with pus, and declares that undoubtedly many deaths in infants ascribed to other causes result from a purulent inflammation of the mastoid antrum which has been unrecognized. In many cases the only evidence of the ear affection has to be gained from a careful study of the child for several days.

10. **Serum Treatment of Hay Fever.**—Knight sums up the present status of this treatment practically as follows: A final decision as to its value does not, as yet, seem warranted. There are so many discrepancies and sources of error that the problem is not easy to solve. The method of treatment varies greatly with the physician. There is also lack of uniformity in the preparation and use of the serum as well as in the general management of the patient. He thinks that it is fair to require an observance of the ordinary laws of health, even if such special precautions as excluding the night air during sleep, and so on, are not adopted. The strength of the serum and the sources from which it is obtained, as well as care and moderation in its administration, are important points. The writer believes from the mass of experience and literature relating to this subject, that a just estimate of the value of serum will soon be reached. The serum treatment at least does no harm even if it gives no better results than those attained by other methods.

11. **Blood Pressure, Pulse and Altitude.**—Gardiner and Hoagland found a rough ratio between pulse rate and blood pressure; the more rapid the pulse the lower the blood pressure. They also noted that when a pulse rate was but little affected by an altitude of 14,000 feet, the blood pressure was also more constant, and that cases of mountain sickness are accompanied by a fall in blood pressure and a rapid pulse rate. They conclude that patients suffering with high tension are likely to be benefited by being sent to high altitudes, while the change probably would be an undesirable one for patients in whom the blood pressure is abnormally low at sea level.

14. **Korsakoff's Disease.**—Hunt reports four cases. The first was alcoholic plus drugs; the second and third were both uncomplicated alcoholic; the fourth was post-typhoidal, and may have been complicated with alcohol. Only the first showed distinct neuritic symptoms, although both the second and fourth patients were weak on their legs, and probably in both the knee-jerk was diminished. All except the typhoid patient showed a tremor. All four displayed characteristic and identical mental symptoms—loss of memory for recent events, disorientation as regards time and place, confusion followed by violence and motor restlessness. Two of the four patients recovered; none died; two returned to their excesses, and their cases may practically be considered as chronic.

Boston Medical and Surgical Journal.

March 8.

16 Value of Laboratory Methods to the County Practitioner. J. R. Cowan, Danville, Ky.
17 *Value of Virchow's Smooth Atrophy of the Base of the Tongue in the Diagnosis of Syphilis. N. B. Potter, New York.
18 Demonstration of the Spirochæta Pallida of Syphilis, with Description of Rapid Method of Staining. T. J. Manahan, Boston.
19 Congenital Occlusion of the Small Intestine: Operation; Autopsy. L. Davis and O. Richardson, Boston.

17. **Virchow's Smooth Atrophy of Tongue in Syphilis.**—As the result of investigations on a large number of patients Potter concludes that a normal base of the tongue is probably of considerable value in excluding an old syphilitic infection; whereas, a typical atrophy of the base of the tongue in an individual below fifty points to syphilis. A moderate or slightly marked atrophy of the base of this organ is of little value.

New York Medical Journal.

March 10.

20 Correction of Deformity Resulting from Hip Disease. D. D. Ashley, New York.
21 Sporadic Trichinosis. D. Bovaird, Jr., New York.
22 Practical Results Accomplished with Radiant Energy. S. Stern, New York.
23 Surgical Treatment of Prostatic Enlargement. N. Jacobson, Syracuse, N. Y.
24 Determination of the Gastric Area, with Special Reference to Transposition of Viscera, Hour-Glass Stomach, Gastroptosis, Etc. A. L. Benedict, Buffalo.
25 Diarrhea and Its Diagnostic Significance. J. P. Tuttle, New York.
26 *Diagnostic and Prognostic Value of an Examination of the Throat in Pulmonary Tuberculosis. W. G. B. Harland, Philadelphia.
27 Peculiar Case of Infantile Palsy of Spinal Origin. F. Robbins, New York.
28 *Balsam of Peru in Castor Oil as a Surgical Dressing. E. V. Hubbard, New York.

26. **Value of Throat Examination in Tuberculosis.**—Harland points out the importance of the possible presence of tuberculosis when patients complain of catarrhal symptoms of the upper air tract.

27. **Infantile Palsy of Spinal Origin.**—In the case reported by Robbins, forceps, fillet, hand or pelvis did not form etiologic factors. A drooping of the right arm was noticed immediately after the birth of the infant. There was never the slightest evidence of voluntary control of the right arm. There was no evidence of cerebral implication. For experimental rather than for therapeutic purposes, the infant was stretched out at full length on the bed, its arms placed above its head, the middle fingers touching. A pull at his feet brought both arms down at once, flexed in the attitude of defense on the chest, both being flexed at the elbow, and then extended to drop along the body. This experiment was repeated several times and invariably yielded the same result. Robbins thinks it remarkable that exactly that position in which the greatest amount of tension is brought to bear on the fifth and sixth cervical vertebræ should have resulted in a temporary restitution of conductivity in the musculo-cutaneous nerve. He suggests that possibly the cervical roots of this nerve have only been stretched at their point of emergence from the spine.

28. **New Surgical Dressing.**—Hubbard speaks of a dressing for wounds which was first employed by the late Dr. W. W. Van Arsdale of New York, consisting of a mixture of balsam of Peru (℥ss), and castor oil (℥i). The combination forms a permanent mixture, moderately antiseptic, always viscus, and always serving the purpose of a dressing that will not harden and that will take up the wound discharges as fast as they are formed. Hubbard cites a number of instances in which he made use of this mixture with good results.

St. Louis Medical Review.

March 8.

29 *Digital Irritation of the Epiglottis as a Means of Resuscitation After Apparent Death from Asphyxia. W. Freudenthal, New York.

29. **Digital Irritation of Epiglottis.**—In cases of apparent death from asphyxia Freudenthal introduces the hand into the mouth of the patient until he feels the epiglottis, and then moves the index finger to and fro over this structure. Experience has shown him that this is one of the best and easiest means to excite respiration in all such cases. Two cases are cited.

American Journal of Orthopedic Surgery, Philadelphia.

January.

30 *Use of Traction in Hip Disease. E. H. Bradford, Boston.
31 *Treatment of Hallux Valgus. H. A. Wilson, Philadelphia.
32 Portable Frame for Holding a Patient with a Fracture of the Shaft of the Femur While Plaster-of-Paris is Applied. F. E. Peckham, Providence, R. I.
33 *Multiple Cancellous Exostoses. G. G. Davis, Philadelphia.
34 Case of Sacro-Iliac Disease in a Child, with Operation. E. W. Ryerson, Chicago.
35 Congenital Luxation of the Head of the Radius. W. E. Blodgett, Detroit.
36 Spontaneous Fractures with Rickets. H. O. Feiss, Cleveland.

30. **Traction in Hip Disease.**—Bradford claims that in the treatment of hip disease a force which will counteract muscular spasm and draw the head of the femur away from the acetabulum, favors correction, the prevention of deformity and more rapid healing of the diseased bone tissue. Traction is not needed during the whole period necessary for the treatment, but only during the stage of active muscular spasm. During the ulcerative stage fixation of the joints and strong traction are both needed in the convalescent stage, and limited motion of the joint is not injurious; but protection from violence is essential until the bone tissues have regained their normal strength.

31. **Treatment of Hallux Valgus.**—Wilson's paper deals with the clinical and radiographic conditions found to exist in 77 patients suffering from some form of hallux valgus and a report of four cases showing the results obtained by operation.

33. **Multiple Cancellous Exostoses.**—Davis reports two cases. The first patient was a man, aged 53, who when 10 years of age noticed a hard lump on the fourth finger of the right hand at the joint between the proximal and middle phalanges. About the same time hard lumps appeared on both humeri above the insertion of the deltoid muscles beneath the insertion of the pectoralis major on the antero-internal aspect. The lumps were hard, immovable, painless and attained their maximum size in a few months. Both forearms then became affected. Two years later both knees became involved and the legs became crooked. Later various joints became impaired. The condition progressed, gradually involving all the bones. The second patient was a child 3 years of age. The affection was noticed when it was about 1 year old. It involved the bones of the hand, arm, leg, several of the ribs and the scapulæ.

The Post-Graduate, New York.

February.

37 Intussusception of the Intestines; Operation; Recovery. T. Dunham, New York.
38 Postoperative Case of Tuberculous Kidney. G. F. Morris and F. Cabot, Jr., New York.
39 Case of Perineal Prostatectomy. F. Cabot, Jr., New York.
40 Chronic Myelitis. J. Collins, New York.
41 Forceps Version and Craniotomy. G. L. Brodhead, New York.
42 *Simple Clinical Method for the Use of Detection of the Spirochæte Pallida of Syphilis. L. B. Goldhorn, New York.
43 Gastroenterostomy and Cholecystenterostomy. S. Lloyd, New York.
44 Medical Language. A. Rose, New York.

42. **Simple Method for Detection of Spirochaete Pallida.**—Goldhorn describes a method for rendering the spirochete of syphilis so plain and characteristic as to make its differentiation from the ordinary, saprophytic spirochetes quite simple. The stain is prepared as follows: One gram lithium carbonate is dissolved in 200 c.c. of water, and 2 grams of medicinal methylene blue are added. When completely dissolved the solution is heated on the water-bath until a rich polychrome has formed. The solution is filtered through cotton. One-half of this polychrome is carefully acidified with 5 per cent. acetic acid until blue litmus paper shows a faint reddish tinge. The second half of the polychrome is added and into this corrected dye a weak watery eosin solution of about 0.5 per cent. strength is poured until complete precipitation has taken place. This point is determined by filtering a sample from time to time till the filtrate is of a pale blue watery color and slightly fluorescent. The mixture is set aside for a day and is then filtered through a double layer of filter paper. The precipitate is dried slowly at about 40 C. When dried it is dissolved in wood alcohol, making a strong solution, which is permitted to stand for a day, when it is again filtrated. To use this dye a sufficient quantity is dropped on an unfixed preparation so as to cover it; after two or three seconds it is poured off and slowly introduced into clean water, the preparation side turned down. When washed the preparation is drained and dried in the air. The *Spirochæte pallida* is stained a purplish color, which may be changed into a light black or black-brown by treating the specimen with Gram's or Lugol's solution.

Interstate Medical Journal, St. Louis.

February.

45 *Transfusion. W. B. Dorsett, St. Louis.
46 Osteitis Deformans. M. B. Clopton, St. Louis.
47 Traumatic Diplegia; Operation; Benefit. W. S. Deutsch, St. Louis.
48 Plempius of Louvain. J. M. Ball, St. Louis.
49 *Two Unusual Cases of Tubal Pregnancy. C. H. Dixon, St. Louis.

45. **Transfusion.**—It is Dorsett's practice, after prolonged intra-abdominal operations, whether much or little blood has been lost, to inject into the rectum from one to two pints of

normal saline solution. In puerperal eclampsia there is no better remedy, in his opinion, than the introduction of normal saline solution into the veins. In these cases he thinks it best always to open a vein for the purpose of lessening the quantity of toxic blood in the circulation and then to supply the quantity removed by normal saline solution, which dilutes the toxins and renders them less potent, and also stimulates glandular excretion. Dorsett cites five cases illustrating the good results following this procedure. His experience with adrenalin in conjunction with normal saline solution is limited to one case. He thinks it is valuable as an adjunct because by its action the vasomotors are held in check and the intravenous saline solution equalizes the circulation. He warns against injecting too large quantities into the veins for fear of rupture of the vessels or fatal edema of the lungs.

49. **Unusual Cases of Tubal Pregnancy.**—Dixon cites two cases. The first patient, a multipara, menstruated regularly from May, 1902, till September, 1904, which period she missed. On September 14 she noticed a slight flow of blood which commenced with a severe pain lasting a few hours, starting in the region of the rectum and extending toward the stomach, accompanied by nausea. Eight days later she had a similar attack, only more severe. Two days later the pain was general over the abdominal cavity. There was muscular rigidity over the right inguinal region, flatness on percussion and some soreness. Vaginal examination showed a large swelling, soft and painful, on the right side, extending posteriorly. September 26 the patient had another attack of pain, more severe than the preceding ones, but of same character and location. She had been removed to the hospital the day before operation, and a few hours later the cavity was full of blood, the bleeding being from the right tube. Recovery was uninterrupted.

She menstruated regularly until May 22, 1905, when she had an attack of pain, paroxysmal in character, in the left side. She had none of the usual symptoms of pregnancy. A flow had existed since April 13. Examination showed a large swelling in the left pelvic region, pointing downward, painful and soft, with the uterus slightly enlarged. Operation showed rupture of the left tube, which was removed. Recovery was uninterrupted. In the case of the second patient the right tube was the one involved. In 15 cases seen by Dixon the pregnancy was always on the right side, except in the one in which there was a secondary pregnancy on the left side. In most of these cases there was rigidity of the muscles over the side of the trouble, which Dixon thinks is a point worth noting, because the absence of the rigidity usually is given as a differential sign between tubal pregnancy and appendicitis.

Iowa Medical Journal, Des Moines.

February 15.

50 *Shall Wholesale Poisoning Be Sanctioned by the People of the United States to the Detriment of the Masses, and the Advantage of a Few Privileged Criminals? C. F. Wahrer, Ft. Madison.
51 To Spread Sound Ideas is to Work for Humanity. J. R. Jicinsky, Cedar Rapids.
52 *Case of Poisoning by Oil of Tansy. H. A. Leipziger, Burlington.

50. **Shall Wholesale Poisoning Be Sanctioned?**—Speaking of pure foods and the "patent-medicine" evil, Wahrer states that wholesale poisoning is being done all the time for the purpose of enriching a few at the expense of the health of the masses, who are asked to consume these poisonous products under the pretense that they are wholesome food. While adulteration does not always work injury to health it does deceive. Adulterations are not always for the purpose of deception, but often for the purpose of cheaply preserving articles from decay, so that they may easily be kept for an indefinite time without loss to the maker or the manufacturer. These preservatives, while subserving the ends of the producer, are usually poisonous and detrimental to the health of the consumer. Wahrer discusses the work done by Dr. H. W. Wiley of the Department of Agriculture and details the results obtained. He also speaks of the nostrum evil and the work done by THE JOURNAL, and by the various lay journals and magazines to suppress this evil.

52. **Poisoning by Oil of Tansy.**—Leipziger reports the case of a woman who took one ounce of oil of tansy for the purpose of producing an abortion. Although she suffered intensely from symptoms of poisoning, she did not abort, but went on to full term, giving birth to a healthy female child.

Denver Medical Times.

February.

53 Presidential Address Delivered Before the Denver County Medical Society. W. J. Rothwell, Denver.
54 *Treatment of Scarlet Fever. N. Weist, Denver.
55 *Id. C. F. Shollenberger, Denver.
56 Id. D. R. Lucy, Denver.
57 Id. A. E. Grant, Denver.
58 Bright's Disease as a Gastrointestinal Toxemia. P. J. Pothuisje, Denver.

54. **Treatment of Scarlet Fever.**—In addition to the customary treatment employed, Wiest uses the following combination, which has yielded good results in every case:

℞.	Tinct. digitalis (fresh)	℥ss	2 |
	Liq. ammon. acetat (fresh)	℥iss	6 |
	Spt. ether nit.	℥ii	8 |
	Syr. tolu	℥ss	15 |
	Aquæ cari, q. s. ad	℥iii	90 |

M. Sig.: A teaspoonful every three hours.

The dose is varied according to the age of the patient. By giving this mixture from the beginning of the disease, every case, he states, has run an even uncomplicated course.

55. **Id.**—Schollenberger thinks that hydrotherapy is more useful to combat the temperature than medicinal antipyretics. In mild cases in which the temperature ranges from 100 to 102.5 F., and in which there are no heart complications, the following formula has given excellent results:

℞.	Tinct. aconit	gtt. xxxii	2 | 12
	Antipyrin	gr. xxxii	2 | 12
	Liq. ammonia acetatis	℥ss	15 |
	Syrupi, q. s. ad	℥ii	60 |

M. Sig.: Teaspoonful every four hours for child 6 years old.

Therapeutic Gazette, Detroit, Mich.

February 15.

59 *What is the Best Method of Treating Uterine Inertia?—A Symposium. E. H. Grandin, C. Jewett, J. O. Polak, Brooklyn, N. Y., and W. P. Manton, Detroit, Mich.
60 *Present Treatment of Pneumonia as Exemplified by the Routine Treatment of the Disease in Four of the Large New York Hospitals. H. R. Loomis, New York.
61 *Treatment of Pneumonia. S. P. Johns, North San Juan, Cal.
62 Therapeutic Value of Eserin in Ophthalmic Practice. A. Brav, Philadelphia.
63 *Backache in Women and Its Treatment. W. E. Parke, Philadelphia.
64 Brometone in the Control of Epilepsy. W. Kempster, Milwaukee.

59. **Treatment of Uterine Inertia.**—Grandin gives first place to prophylaxis, keeping the nerve centers at par. He advises giving women who possess the characteristics of repressed nerve tone strychnia and quinin during the latter months of pregnancy, in the dosage of gr. 1/60 of the former and gr. 1 of the latter, three times daily. After the birth of the child the uterus should be given a chance to regain tone before resorting to attempts to deliver the placenta. Other causal factors being absent, Grandin proceeds at once to thorough tamponade of the uterus. On the removal of the gauze, within thirty hours as a rule, the uterus contracts.

Simple inertia in the first stage of labor, with membranes unbroken and patient getting sufficient sleep and nourishment, Jewett does not treat at all, except, perhaps, to eliminate recognized causes. In the presence of indications for prompt delivery he has found the employment of alternate hot and cold compresses over the abdomen most useful. He also administers quinin, in from 5 to 10 grain doses, or strychnin, gr. 1/30, every four hours. In inertia in the second stage, the treatment is the same as in the first stage. After full dilatation he resorts to the use of forceps.

When the membranes are unruptured and the pains are irregular, inefficient and powerless, after emptying both bladder and rectum, Polak administers morphin gr. 1/4 and atropin, gr. 1/150, and makes a firm vaginal tamponade of gauze. When the pains have been strong and regular, and then gradually diminish in force and frequency, he gives strychnin gr. 1/30 every half-hour until 1/5 gr. has been taken. When the inertia follows the delivery of the placenta, friction, ergot, and uterine tamponade are resorted to.

In the ordinary case of inertia Manton pins his faith to strychnin, quinin, and strong black coffee.

60.—This article appeared in *Med. Rev. of Reviews;* abstracted in THE JOURNAL A. M. A., March 17, 1906, page 828.

61. **Treatment of Pneumonia.**—Johns favors the use of chloral and infusion of digitalis in the treatment of pneumonia, employed according to the methods described by G. W. Balfour. The dose varies with the age of the patient. For an adult the first dose is 20 grains of chloral in half an ounce of infusion of digitalis. The subsequent doses are 10 grains of chloral in half an ounce of infusion of digitalis, every four hours, to be continued until the temperature falls to normal. Johns has used this treatment for more than ten years in all kinds of cases and has found it equally good in all. [Is not 10 grains of chloral every four hours rather a large dose?—ED.]

63.—See abstract in THE JOURNAL, Dec. 23, 1905, page 1979.

Archives of Pediatrics, New York.

February.

65 *Case of Acute Yellow Atrophy of the Liver in a Child Five Years of Age. A. H. Wentworth, Boston.
66 Plea for the More Timely Use of Intubation in Laryngeal Stenosis, and for the Use of Tracheotomy in Certain Neglected Cases. E. W. Saunders, St. Louis.
67 Sclerema Neonatorum. J. P. C. Griffith, Philadelphia.
68 Theory of Natural and Artificial Feeding in Infancy. F. Hamburger, Vienna. Translated by H. I. Bowditch, Boston.
69 *Hydrocephalus and Rachitis; Their Treatment of Radiant Energy. M. A. Cleaves, New York.

65. **Acute Yellow Atrophy in a Child.**—Wentworth reports a case of acute yellow atrophy occurring in a boy of 5 years. At 18 months the patient had tuberculous peritonitis, from which he recovered without operation in about six months. At the age of 3½ years he had lobar pneumonia of the left lower lobe. The first symptom of the final trouble was a slight jaundice. This was followed in a day or two by vomiting and a slight degree of malaise. The child was about the house and out of doors until within four days of his death. On the sixteenth day of his illness he became delirious. The urine was negative. A diagnosis of the condition was not made during life. When the abdomen was opened at autopsy firm adhesions were found everywhere. The liver was not diminished in size, and the cut surface presented areas of a bright greenish-yellow color on a dark red background. The most striking feature of the case was the extreme degree of destruction of liver with the absence of macroscopic signs of atrophy. The liver cells were destroyed in at least three-quarters of the liver. The urine had not been examined for leucin and tyrosin.

69. **Roentgen Ray in Hydrocephalus and Rachitis.**—Cleaves reports a case of hydrocephalus in which the patient was exposed to the *x*-ray for five minutes, six inches from the target, biparietal, and treated to an arc light bath, the entire body being exposed to the energy of 10 ampere arcs or a total of 4,000 candle power. During the seven weeks the treatment was continued the child improved in every way. The mental improvement was more marked than the physical. The hydrocephalus also became less apparent in size. The second case was one of hydrocephalus due to rickets. This patient also improved under radiant light treatment.

Ophthalmic Record, Chicago.

February.

70 *Triangular Opacity in the Superficial Layers of the Cornea Occurring in Syphilitic Subjects. W. C. Posey, Philadelphia.
71 *Herpes Zoster Ophthalmicus. E. Stieren, Pittsburg, Pa.
72 New Device for Illuminating and Controlling the Intensity of Illumination for the Amblyoscope. N. M. Black, Milwaukee.
73 Self-Checking Speculum. S. S. Bishop, Harrisburg, Pa.
74 Means of Time Saving when Refracting. H. P. Larkin, Philadelphia.
75 Foreign Bodies in the Cornea. C. C. Conkey, Superior, Wis.
76 A Neglected Duty. J. B. Taylor, Bloomington.

70. **Syphilitic Opacities of the Cornea.**—Posey cites the case of a lad of 17 who was the subject of congenital syphilis. During an attack of interstitial keratitis there appeared a triangular opacity in the superficial layers of the cornea which had to be differentiated from certain forms of keratitis parenchymatosa. The opacity was entirely avascular and was composed apparently of a series of fine lines which ran in a generally vertical direction from the base to the apex of the triangle. The rest of the cornea presented the general diffuse haze and remnants of interstitial vessels which is usual after interstitial keratitis. The second patient presenting this unusual condition of the cornea was a woman 32 years of age, a subject of either late secondary or early tertiary syphilis. In the left eye there was a triangular zone of opacity corresponding in character, position, and extent to that seen in the first case.

71. **Herpes Zoster Ophthalmicus.**—Stieren reports a minimum and a maximum case of this affection. He does not believe in the acute specific hypothesis of the disease, since it never occurred in epidemics. In all the cases which have come under his observation he has been able to trace a history of exposure to cold or dampness after some form of unusual exertion, with consequent fatigue, in individuals of sedentary habits.

Texas Medical News, Austin.

February.

77 *Creeping Disease. J. D. Moorhead, Desdemona, Texas.
78 Dermatitis Herpetiformis. J. W. Carhart, Austin.
79 Cure and Treatment of Tuberculous Throat Affections. E. D. Sinks, El Paso, Texas.

77. **Creeping Disease.**—Under this title Moorhead describes a peculiar skin affection. The patient, a boy 5 years old, was said to be suffering from a Brazilian worm in his foot. The worm disappeared during the winter, only to reappear with the approach of the warm season. The infection was believed to have come from a family which came from Brazil and some of the members of which had their feet infected with this parasite. The worm travels in the layers of epidermis, pursuing rather a zigzag course, giving the skin much the same appearance as the surface markings of moles in the soil. The parasite moves from one-half to one inch during the twenty-four hours, usually at night, leaving a raised line of epidermis about one-eighth of an inch in width. The only effective treatment of the condition is excision of the progressive end of the line with plenty of tissue included to make sure of getting the parasite. Moorhead has succeeded in destroying the parasite in five cases by freezing the progressive or terminal end of the line with ethyl chlorid, one application being sufficient in each case.

Journal of Kansas Medical Society, Lawrence.

February.

80 The Physical Basis of Fatigue. J. M. Latta, Wichita.
81 *Value of Antiseptics in the Treatment of Infected Wounds. G. M. Gray, Kansas City.
82 Spinal Injuries, with Special Reference to the Mechanical and Operative Treatment. E. F. Robinson, Kansas City.

81. **Value of Antiseptics.**—Gray is somewhat skeptical regarding the value of any of the antiseptics in general use in the treatment of infected wounds. He is convinced that both carbolic acid and bichlorid of mercury have been the means of causing death in more cases than they have saved from them. He favors substituting normal salt solution for these more severe agents and basing the treatment on the plan of elimination by evacuation of the pus and provision for drainage instead of persisting in the daily application of strong antiseptic solutions that in his opnion do more harm than good.

Journal of Infectious Diseases, Chicago.

February.

83 Observations on the Agglutination of Bacteria. W. H. Park, New York.
84 Comparative Studies of Diplococci Decolorized by Gram's Method, Obtained from the Spinal Fluid and from the Nares in Cases of Epidemic Cerebrospinal Meningitis. E. K. Dunham, New York.
85 *Frequent Occurrence of Meningococci in the Nasal Cavities of Meningitis Patients and of Those in Direct Contact with Them. M. E. Goodwin and A. I. von Sholly, New York.
86 Temporary Alteration of Character of an Organism Belonging to the Colon Group. O. Klotz, Montreal.
87 Longevity of Bacillus Typhosus in Natural Waters and in Sewage. H. L. Russell and C. A. Fuller, Madison.
88 Relation Between Oxygen in Water and the Longevity of the Typhoid Bacillus. G. C. Whipple and A. Mayer, Jr., Brooklyn, N. Y.
89 Relative Applicability of Current Methods for the Determination of Putrescibility in Sewage Effluents. G. A. Johnson, W. R. Copeland and A. E. Kimberly, Columbus, Ohio.
90 Comparative Review of Current Methods for the Determination of Organic Matters in Sewage. G. A. Johnson and A. E. Kimberly, Columbus, Ohio.
91 Method for the Direct Determination of Organic Nitrogen by the Kjeldahl Process. A. E. Kimberly and M. G. Roberts, Columbus, Ohio.

92 Practical Advantages of the Gooch Crucible in the Determination of the Total and Volatile Suspended Matter in the Sewage. A. E. Kimberly and H. B. Hommon, Columbus, Ohio.
93 Resistance to Decomposition of Certain Organic Matters in Sewage. H. W. Clark, Boston.
94 Collection and Preservation of Samples of Sewage for Analysis. S. DeM. Gage and G. O. Adams, Ithaca, N. Y.
95 Ready Method of Preparing a Silica Turbidity Standard. E. C. Levy, Richmond, Va.
96 Solubility of Calcium Carbonate and of Magnesium Hydroxid and the Precipitation of These Salts with Lime Water. G. C. Whipple and A. Mayer, Jr., Brooklyn, N. Y.
97 Experiments with the Use of a Nonbasic Alum in Connection with Mechanical Filtration. G. C. Whipple and F. F. Longfellow, Brooklyn, N. Y.
98 *Use of Copper Sulphate in Water Filtration. H. W. Clark and S. DeM. Gage, Ithaca, N. Y.
99 Bactericidal Action of Copper. H. W. Clark and S. DeM. Gage, Ithaca, N. Y.
100 Determination of Copper in Water. F. B. Forbes and G. H. Pratt.
101 A Notable Source of Error in Testing Gaseous Disinfectants. H. W. Hill, Minneapolis.
102 Methods of Bacteriologic Examination of Milk. F. H. Slack, Boston.
103 Suggestions for Changes in the Schedules for Making Broth, Gelatin and Agar, Recommended in the last Report of the Committee on Standard Methods of Water Analysis. H. W. Hall, Minneapolis.
104 Device for Filtering Toxins, etc., by the Use of Water Pressure. H. W. Hill, Minneapolis.

85. **Occurrence of Meningococci in the Nasal Cavities.**—Goodwin and Sholly isolated meningococci from the nasal mucus of 50 per cent. of meningitis patients during the first two weeks of the disease, and from about 10 per cent. of the people most closely in contact with them. They were frequently present in enormous numbers. Two cultures isolated from normal students were like meningococci culturally and in their pathogenicity, but did not have the same specific agglutinins. The authors believe that the finding of meningococci in great numbers in the nasal mucus of a large proportion of the patients and of those caring for them, and the absence of meningococci from the nasal mucus of a large number of normal persons examined, would strongly indicate the necessity of isolating cases of epidemic cerebrospinal meningitis, at least during the early weeks of the disease.

98. **Use of Copper Sulphate in Water Filtration.**—Clark and Gage believe that the treatment of water with copper sulphate or by storing it in copper vessels has little practical value, for the following reasons: 1. The use of any method of sterilization which is not absolutely effective is dangerous in the hands of the general user, tending to induce a feeling of false security, and leading to the neglect of ordinary precautions which would otherwise be employed. 2. The removal of bacteria, *B. coli* and *B. typhosus*, by allowing water to stand in copper vessels for short periods, while occasionally effective, is not sure, and the time necessary to accomplish complete sterilization is so long that the method would be of no practical value to the ordinary user. Furthermore, metallic copper seems to have little more germicidal power than iron, tin, zinc or aluminum. 3. Although the removal of *B. coli* and *B. typhosus* is occasionally accomplished by dilute solutions of copper sulphate, these organisms may both live for many weeks in water containing copper sulphate in greater dilutions than 1 to 100,000; and in order to be safe dilutions of 1 to 1,000 must be used, in which case the water becomes repugnant to the user because of its strongly astringent taste. 4. In some instances very dilute solutions of copper sulphate of colloidal copper absorbed from contact with clean metallic copper, appear to have a decidedly invigorating effect on bacterial activity, causing rapid multiplications, when the reverse would have been true had the water been allowed to stand the same length of time without any treatment.

Pennsylvania Medical Journal, Athens.

February.

105 *The Trend of Psychiatry. E. E. Mayer, Pittsburg.
106 *Protective Inoculations Against Typhoid Fever. D. H. Bergey, Philadelphia.
107 Typhoid Fever in Pennsylvania. S. Egbert, Philadelphia.
108 *Herpes Zoster Ophthalmicus. E. Stieren, Pittsburg.
109 *The Question of Lowered Gastric Secretion. C. G. Stockton, Buffalo.
110 *Surgical Treatment of Cardiospasm. E. Martin, Philadelphia.
111 Treatment of Benign Stenosis of the Pylorus and Duodenum Resulting from Spasm and Scar Tissue and from Abdominal Adhesions. A. Bernheim, Philadelphia.
112 Symptomatology and Diagnosis of Cancer of the Stomach. J. J. Gilbride, Philadelphia.
113 *Gastroenterostomy; Its Indications and Technic. W. L. Rodman, Philadelphia.
114 *Pain of Obscure Origin Simulating Neuritis, Neuralgia or Organic Lesions. J. H. Musser, Philadelphia.

105, 106 and 114.—See abstracts in THE JOURNAL, Oct. 28, 1905, page 1349.

108. **Id.**—Oct. 21, 1905, page 1271.

109, 110 and 113. **Id.**—Nov. 4, 190 page 1439.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

February 24.

1 *Complications of Scarlet Fever. W. Hunter.
2 Whitlow and Its Treatment. G. B. M. White.
3 *Plumbism from the Ingestion of Diachylon as an Abortifacient A. Hall and W. B. Ransom.
4 *Indications and Contraindications for the Removal of the Gall Bladder. A. W. M. Robson.
5 *Case of Intrahepatic Calculi. H. R. Vachell and W. M. Stevens.
6 Two Cases of Pancreatic Necrosis. G. Barling.
7 A Paracolon Bacillus Found in the Urine. W. Mair.

1. **Complications of Scarlet Fever.**—Hunter records his observations of the relation of oral sepsis in scarlet fever to the complications occurring during that disease. One result stands out very clearly, viz., that the severity of scarlet fever, that is to say of the septic complications of it, is greatly influenced by the degree of oral sepsis present. Thus, of cases without oral sepsis only 35 per cent. had complications of moderate or severe degree; whereas of cases with oral sepsis 66 per cent. showed such complications. The severity of the initial angina also is affected by the presence of this previous sepsis. Hunter states that the actual frequency of the occurrence of complications of some kind or another is but little affected by the absence or presence of oral sepsis, but that the number of complications met in cases of oral sepsis is much higher than in those without it; and the severity of the complications met with is much greater.

3. **Plumbism from Diachylon.**—Hall and Ransom show that the custom of taking diachylon as an abortifacient has assumed such serious proportions in England that steps must be taken to stop this evil. They offer the following suggestions as the best method of dealing with the matter: 1. To compel by act of parliament the publication of its ingredients on the cover of every patent remedy. 2. To prosecute and to punish the makers and vendors of diachylon pills 3. To seek the support of the lay press, and to invite it to abstain from publishing advertisements of "female irregularity" remedies. 4. To circularize, or otherwise to inform, all medical practitioners in the country of the possibility of such a cause in obscure cases of plumbism, so that they may recognize it and warn their patients. 5. Compulsory notification of all cases of abortion. 6. To make lead poisoning in women a notifiable disease. 7. To control, or to prohibit, the sale of diachylon.

4. **Removal of Gall Bladder.**—As the result of his own experience and that of others, Mayo Robson is convinced that there is an undoubted relationship between cholelithiasis and cancer of the gall bladder and ducts. He says that inasmuch as gallstones produce characteristic symptoms and as a rule, therefore, are easily diagnosed, and since they can be removed in the early stages, before serious complications have supervened, with very little risk (less than 1 per cent.) in his experience, the preventive treatment for cancer of the gall bladder is removal of the source of irritation. He is so impressed with the importance of this view, that he recommends the early removal of gallstones because the symptoms are likely to recur and lead to other complications. In a considerable percentage of such cases malignant disease is likely to supervene if the irritation is not removed.

5. **Intrahepatic Calculi.**—The patient whose case is related by Vachell Stevens was admitted to the infirmary complaining of jaundice and of painful swelling in the stomach. The liver extended down to within a finger breadth of the umbilicus. The constitutional symptoms were those of jaundice. The

patient became rapidly worse, the jaundice deepened, the hepatic enlargement increased, the stools became colorless and he died in a comatose state on the fourteenth day after admission. The liver weighed 97 ounces and over the whole extent of its surface were small projections caused by underlying calculi. Over the upper surface of the right lobe there were numerous white points which on section proved to be tiny abscesses containing thick pus. Since an attack of typhoid forty-one years previously (when 11 years of age) the patient had never been robust, although no symptoms suggestive of gallstones appeared until he was 23 years of age, since which time till his death, twenty-nine years later, he had suffered from frequent attacks of colicky pain attributed to dyspepsia. The gall bladder did not contain any stones.

The Lancet, London.

February 24.

8 *Gastric Surgery. H. J. Paterson.
9 Physical Anthropology and Ethnology of British New Guinea. C. G. Seligmann.
10 Oral Sepsis. S. Spokes.
11 *Recurrent Herpes Gestationis. C. A. D. Bryan.
12 Acute Hemorrhage into a Gall Bladder the Seat of Infective Cholecystitis and Hundreds of Gallstones. J. A. W. Pereira and J. D. Harris.
13 *Case of Double Vaginal Cysts. H. MacNaughton-Jones.
14 An Attempt to Simplify the Diagnosis of Ocular Paralysis. W. H. Haw.

8. **Gastric Surgery.**—Paterson reviews the immediate and remote results of gastrojejunostomy, the surgical treatment of gastric ulcer, of gastrorrhagia and of hour-glass stomach.

11. **Recurrent Herpes Gestationis.**—Bryan reports a case of this kind occurring in a multipara. There was no history of syphilis. The rash appeared on the arms and consisted of erythema, papules and vesicles. It was irritating and painful. A few patches, without vesication, appeared on the thighs and body. The patient was about five months pregnant. The rash gradually extended over the rest of the body, leaving only the palms and the soles free, though the face was only affected by one or two spots. When the pain and irritation were most severe the forearms became hot and swollen and the vesicles were continually bursting, the fluid from them giving a sensation of scalding to the arms, whilst fresh crops rapidly appeared. These symptoms produced a good deal of insomnia. Treatment was futile. After six weeks of the disease the death of the fetus was diagnosed. The patient was delivered of a dead fetus and the rash gradually disappeared. About ten months later she again became pregnant and the rash reappeared. The eruption was always at its worst when the patient should have had her catamenial period, remaining at its height for about a week and then gradually subsiding, but never disappearing entirely.

13. **Double Vaginal Cysts.**—Jones' patient was a married woman, aged 35 years. She had had no children. In curetting for endometritis Jones found a cystic tumor of the size of a large pigeon's egg in the vaginal vault. Three months later the patient returned complaining of vaginal distress and pain. Low down on the posterior wall of the vagina was another cyst distended with fluid and nearly of the size of the one removed previously.

Journal of Tropical Medicine, London.

February 15.

15 Rhinopharyngitis Mutilans (Destructive Ulcerous Rhinopharyngitis). A Problem in Tropical Pathology. J. F. Leys.

Australasian Medical Gazette, Sydney.

January 20.

16 Treatment of the Paroxysmal Neuroses. W. N. Robertson.
17 Note on Precipitins. D. A. Welsh.
18 A Case of Bradycardia. S. Gillies.
19 Etiology of Dengue Fever. T. L. Bancroft.
20 *Ectopic Gestation During Lactation. R. E. Weigall.
21 Eclampsia During Pregnancy and the Puerperium. L. R. Steele.
22 Perforating Ulcer of Duodenum; Operation; Recovery. J. Harris.

20. **Ectopic Gestation During Lactation.**—Six months after the birth of a child, and while the mother was nursing the baby, Weigall removed intact a perfect specimen of a tubal pregnancy about three inches in diameter, in the last inch of the tube near the fimbriated extremity. The uterus and tubes appeared to be normal. There were none of the usual symptoms of extrauterine pregnancy. The diagnosis was based on the softening of the os uteri and the presence of a rapidly forming tumor.

Annales de l'Institut Pasteur, Paris.

Last indexed, page 696.

23 (XX, No. 1.) Etudes sur les bacilles paratyphiques. E. Sacquépée and F. Chevrel.
24 *Etudes sur la fièvre jaune (yellow fever). E. Marchoux and P. L. Simond.
25 *L'histologie pathologique de la syphilis héréditaire dans ses rapports avec le "Spirochæta pallida." C. Levaditi.
26 Etude du meningocoque. P. Vansteenberghe and Grysez.

24. **Report of the French Yellow Fever Commission in Brazil.**—In this second report Marchoux and Simond explain that the *Stegomyia fasciata* is the only mosquito known which does not die after depositing its first batch of eggs. The female stegomia is able to survive and to lay several batches. This long survival allows the virus of yellow fever time to develop in its body so that it is capable of infecting man. If it died regularly after laying its first batch of eggs—like other mosquitoes—yellow fever would be unknown among human beings. It is possible also, they add, that the virus is adapted to the organism of this special mosquito to the exclusion of all others. Infection of the stegomyia by heredity is possible, and a recently extinct focus might be relighted by this means. This fact is important for prophylaxis, although as a rule, infection by inheritance does not seem to play a very prominent part in the spread of yellow fever. The stegomia does not eat the blood from the hemorrhages common during the second phase of yellow fever, nor the fluid of the black vomit nor the dejecta. The mosquito, even in captivity, does not feed on this material unless compelled by starvation. The larvæ of the stegomyia raised in water containing fresh carcasses of infected mosquitoes do not contract infection, and the adult mosquitoes developing from them have no infecting power. When the infected *Stegomyia fasciata* is kept at a temperature of about 20 C. (68 F.) it does not seem to possess infecting power. In all their experiences at Rio de Janeiro the members of the commission never succeeded in infecting the stegomyia from persons during the incubation stage of yellow fever. The virus of yellow fever can be artificially transmitted from mosquito to mosquito in the laboratory, but probably not under natural conditions. They never succeeded in making several successive passages. They had only a single positive result in numerous experiments in which they tried to induce infection by hereditarily infected mosquitoes. The successful infection realized in this one case also proved to be exceptionally mild, suggesting that possibly the virus may become attenuated by its hereditary transmission.

25. **Spirochaeta Pallida in Inherited Syphilis.**—Levaditi describes with colored plates the histologic findings in 4 syphilitic new born infants, and in an infant who had succumbed to pneumonia, and in a macerated fetus from syphilitic parents. The *Spirochæta pallida* was found in large numbers in the liver, lungs, suprarenal capsules, and skin, most numerous in the order named; it was comparatively rare in the other organs. The finding of such large numbers of these spirochetes in the macerated fetus, and also in those infants who had died after breathing only once or twice, disproves the assumption that the spirochete might be an agent of secondary infection. In the cases of acute and rapidly fatal syphilitic infection in these infants the spirochetes were found more diffusely distributed throughout the organism, while in the one case of tardy inherited syphilis the parasites seem to have been mainly confined to the organ principally affected by the syphilitic process, namely, the liver. This localization of the spirochetes in the viscera of the offspring of syphilitic parents suggests the possibility of an inherited syphilis exclusively confined to the splanchnic organs. It might develop without any syphilitic manifestations on the skin or mucous system. This essentially visceral form of syphilis might precede the appearance of external syphilitic lesions, and is interesting from the questions in regard to prophylaxis which it raises. The paternal origin of the inherited syphilis seems certain in one of the cases described. The spirochetes do not seem to linger by preference in the blood, but fasten themselves in the vessel walls and multiply there, passing thence into the cells of the

parenchyma and the connective tissue. They seem to be able to penetrate into the relatively intact protoplasm of certain epithelial elements, such as the cells of the liver and kidneys, of the suprarenal capsules, and probably those of the sweat glands. The pathogenesis of syphilitic lesions is thus explained by the findings of the spirochetes as they are traced through the endoarteritis and periarteritis into the connective tissue (infiltration by mononuclears and sclerosis), and then into the cells of the parenchyma (degeneration of the parenchyma). The maceration of a syphilitic fetus is probably an autolytic, fermentative process in dead tisses. The intrauterine death may be due to intense spirochete infection. Evidences of active phagocytosis against the spirochetes were apparent in all the infants. (See editorial.)

Bulletin de l'Académie de Médecine, Paris.

27 (Year LXX, Nos. 5-6.) *Emigration et santé publique (public health). Chantemesse and F. Borel.
28 *Sur la statistique et la prophylaxie de la tuberculose.
29 *Phrénoptosis. F. Glénard.
30 Assistance médicale et hygiène publique indigènes à Madagascar pendant l'année 1904. Kermorgant and others.

27. **Emigration and Public Health.**—Chantemesse calls attention to the lax measures in vogue in regard to emigrants passing through France to embark for America. He contrasts them with the strict regulations of the United States authorities, especially those enforced before allowing the embarkation of prospective emigrants on vessels bound for our ports. He states that nearly all emigrants from Greece, Syria, etc., pass through France, a total of 70,000 in 1904, and they are under no sanitary supervision after they arrive in southern France and are transported to Havre, changing cars frequently en route. Those found by the steamship company's medical inspectors to have a serious disease that would bar their admission to the United States are sent back to their country, while those with readily curable diseases, or those delayed for the five-day quarantine are boarded out in the town. They report to the inspector every day, and when cured are allowed to embark. In the interim they are liable to spread infection through the hotels and lodging houses where they stop while under treatment, entirely free from any medical sanitary inspection on the part of the town authorities. When rejected as suspicious by the inspectors they wander around the streets of the city ready to spread contagion if the suspected disease actually exists. The French laws on the subject of emigrants date from 1861, and he urges the passage of new ones to place the emigrant service on the same footing as in other European countries and in the United States.

28. **Statistics and Prophylaxis of Tuberculosis.**—The prolonged discussion on this subject shows how misleading statistics are liable to cause mistaken conclusions. The discussion brought out the experience of many practitioners, some advocating and others opposing compulsory notification of cases of tuberculosis. Nearly all accept the importance of notification of cases of death from the disease for disinfection of the apartment. It seems that the mortality from tuberculosis is much higher in France than in Germany, and that it is constantly increasing.

29. **Phrenoptosis.**—Glénard is the apostle of splanchnoptosis and here describes a condition which he calls phrenoptosis, that is, downward displacement of the diaphragm. He considers it responsible for the conditions known as movable heart and cardioptosis, defining movable heart as a cardioptosis, while the cardioptosis is the consequence of the phrenoptosis; the phrenoptosis in turn is merely an accessory episode of the general tendency to ptosis. He states that enteroptosis is a nutritional affection of hepatic nature. The same causes that induce liver affections preside over its origin. It is a malady built up from detached fragments of five morbid groups: dyspepsia, neuropathies, liver affections, nutritional disturbances, and a fifth group which includes movable kidney, movable liver, movable spleen, and movable uterus. It is the character of the ptosis which cements together these fragments. Enteroptosis is the cause of one-third of all the dyspepsias and neuropathies in women, and in every 100 cases fully 80 of the patients are women. Once recognized it is readily curable, but it is incurable when not diagnosed and the special indications treated. The efficacy of appropriate treatment, he believes, is one of the arguments in favor of accepting the affection of a definite morbid entity. The most effectual measure in combating the condition is an appropriate sustaining corset, as he has described in detail in various communications. The latest appeared recently in the *Revue des Maladies de la Nutrition*, 1905.

Presse Médicale, Paris.

31 (XIV, No. 6.) Sur les septicémies en général et les septicémies méningococciques en particulier. Foliet and Sacquépée.
32 La sémeiologie urinaire des opérés (urine after operations). E. Vidal.
33 (No. 7.) Elévation congénitale de l'omoplate (of the scapula). A. Broca.
34 Le meilleur procédé d'entérorrhaphie après enterectomie. P. Desfosses.
35 (No. 8.) *L'ouverture de la pleure sans pneumothorax. T. Tuffier.
36 Existe-t-il une stomatite provoquée par les dentiers en caoutchouc (rubber tooth plates)? C. Mahé.
37 (No. 9.) De la sénilité. A. Létienne.
38 Radioscopie gastrique. G. Leven and G. Barret.
39 (No. 10.) Des oblitérations artérielles par embolie dans le cours des maladies du coeur (heart disease). E. Barié.
40 (No. 11.) L'albumine dans l'alimentation des tuberculeux. H. Labbé and G. Vitry.
41 *L'intoxication saturnine et traitement de la colique de plomb. Deléarde and E. Dubois.
42 La méthode de Bier et le massage dans les contusions et les entorses (sprains). R. de Gaulejac.

35. **Opening the Pleura Without Pneumothorax.**—Tuffier recalls his research in 1895 in which, with Hallion, Quénu and Longuet, he demonstrated that it is possible to inflate the bronchi sufficiently to prevent retraction of the lung when the chest is opened, without interfering with the general circulation. An apparatus was devised and presented to the Société de Chirurgie with which the patient breathed only air under pressure. The apparatus is merely a tube introduced through the mouth into the trachea; an elastic bag around the tube is inflated to plug the air passages outside of the tube. Air under pressure can then be pumped through the tube into the lung and all retraction prevented. It proved very successful on dogs. At first his apparatus was regarded as too complicated in comparison with the benefits to be gained from it, pneumothorax not being regarded by others as such a drawback as he considered it. The subject gained new interest, however, when Sauerbruch invented his air chamber in which operations are performed under minus pressure, while the head of the patient projects outside the chamber and the anesthetic is given outside. Brauer's apparatus reverses the principle, the head of the patient being inside a small air chamber in which the air is kept at plus pressure. This principle is the same as that on which Tuffier's early apparatus was based. Tuffier has performed three important operations with the aid of the Brauer hyperpressure apparatus. (He has both the Sauerbruch and the Brauer apparatus installed in his service.) It worked to perfection, he says, but both this and the Sauerbruch chamber are so extremely complicated that his early apparatu based on the same principle as Brauer's, seems simplicity itself in comparison. He gives illustrations of it (as also of the Sauerbruch and Brauer apparatus), and describes its workings in his experimental experiences with it. The Sauerbruch chamber might be utilized, he remarks, in operating on the brain or elsewhere when venous hemorrhage is feared. Under strong minus pressure there would be less danger that the veins would bleed much. The Brauer apparatus can be used only for operations on the lungs. In all work of the kind, Tuffier suggests that mixing oxygen with the air inhaled would lighten the task of the lungs, and facilitate the operation.

41. **Treatment of Lead Colic.**—Deléarde and Dubois report the successful application of epidural injections of cocain as a means of relieving lead colic. No disturbances were observed in any of the 16 cases in which this treatment was applied. The pain vanished almost at once after the lumbar injection of the anesthetic.

Archiv f. Gynäkologie, Berlin.

Last indexed, page 691.

43 (LXXVII, No. 3.) Bedeutung der Hystreurvse in der Geburtshülfe (hystreurynter in obstetrics). O. Bürger (Schauta's clinic, Vienna).
44 Ueber Acardius. A. Bauereisen.

45 Fatal Nephritis in Parturients Without Eclampsia.—Tödtliche Nephritis bei Gebärenden ohne Eklampsie. W. Poten.
46 *Ueber Cervix-Verletzungen bei Primiparen (lacerations). P. Scheurer.
47 Behavior of Relics of Ovary in Case of Dermoid Cysts.—Verhalten des Eierstocksrestes bei Dermoidcysten, insbes. über ovarielle Fettresorption. A. Gentili.
48 Zur Kasuistik der extramembranösen Gravidität. W. Pfeilsticker.

46. **Laceration of Cervix in Primiparae.**—Scheurer reviews 99 cases of laceration of the cervix in primiparæ. Bleeding was the only symptom that called attention to the tear, and this was sometimes out of all proportion to the extent of the laceration. In more than one-fourth of all the cases the laceration involved more than half of the vaginal portion of the cervix. More than 50 per cent. of the extensive lacerations occurred in deliveries in which obstetric-operative measures had been applied. Abnormal position of the head and large size of the child favor injury of the cervix. It was impossible to detect any influence on the morbidity of the puerperium or on the involution of the uterus from the lacerations.

Deutsches Archiv f. klinische Medizin, Leipsic.

Last indexed XLV, page 1833.

49 (LXXXV, Nos. 3-4.) Aspergillus niger bei Pneumomykosis aspergillina. W. Risel. One case.
50 *Klinische und experimentelle Untersuchungen über Trichinosis und über die Eosinophilie im allgemeinen. C. Stäubli.
51 Zur Pathologie der Asthma bronchiale. P. V. Jezierski.
52 *Blood Pressure and Hypertrophy of Heart in Nephritis.—Ueber Blutdruck und Herzhypertrophie bei Nephritikern. A. Loeb.
53 Fall von Adams-Stokes'scher Krankheit mit Dissoziation von Vorhof- und Kammer-Rhythmus. Lichtheim.
54 4 Fälle von Störung der Reizleitung im Herzmuskel (disturbance in conduction of stimuli by heart muscle). G. Joachim.
55 Action of Light on Enzymes Compared with Action of Photodynamic Substances.—Wirkung des Lichtes auf Enzyme in Sauerstoff- und Wasserstoff-Atmosphäre, verglichen mit der Wirkung der photodynamischen Stoffe. A. Jodlbauer and H. v. Tappeiner.
56 "Dark Action" of Fluorescent Substances.—Weitere Untersuchungen ob eine "Dunkelwirkung" der fluoreszierenden Stoffe statthat. Id.
57 Ueber die Wirkung fluoreszierender Stoffe auf Toxine. Id.
58 *Experimentelles zur Gichtfrage (study of gout). J. J. van Loghem (Amsterdam).
59 (Nos. 5.6.) *Neue Beiträge zur Lehre von der Muskel-Atrophie bei supranuclearen Lähmungen, bes. bei der cerebralen Hemiplegie. H. Steinert.
60 *Zur Pathogenese der Tetanie. F. Pineles.
61 *Neuere klinisch-bakteriologische Erfahrungen bei Typhus und Paratyphus. A. Brion and H. Kayser (Strasburg).
62 Die nosologische Stellung des Symptomkomplexes "Abdominaltyphus." Id.
63 Untersuchungen über das Lokalisations-Vermögen und das stereognostische Erkennen. A. Schittenhelm.
64 Ueber Myasthenie bei sexualem Infantilismus, nebst Untersuchungen über die myasthenische Reaktion. H. Curschmann and M. Hedinger.
65 Ueber Bronchitis obliterans. Edens. Three cases.
66 Embolie der Lungen-Arterie. C. Hart. Supplement to article in vol 84.
67 Blood Pressure und Puise Pressure. Reply to Fellner's article. J. Strasburger.

50. **Trichiniasis and Eosinophilia.**—Stäubli's experience with 7 cases of trichiniasis emphasizes anew the value of eosinophilia as a sign of the affection. The number of eosinophiles began to increase about nine days after ingestion of the infected meat. The eosinophilia, he shows, is connected with the migration of the embryos or their penetration into the muscles. The young brood are distributed by way of the vascular system; large numbers being evident at times in the blood of the heart. He saw no evidences of local production of eosinophiles at points where the muscle was specially invaded. The eosinophilia must be regarded, he states, as a reaction on the part of the organism to substances which pass into the blood from the embryos, or possibly from the degenerated muscle substance. His experiments on animals confirmed the assumption that a rapid destruction of lymphocytes is a bad sign. Four of his cases terminated fatally, and in these he noted the combination of Kernig's sign and absence of the knee jerks. In all his cases the diazo reaction was pronounced, a point which may aid in differentiation.

52. **Blood Pressure and Hypertrophy of Heart in Nephritis.**—Loeb insists that the high arterial pressure is primary and the hypertrophy of the heart a secondary phenomenon in acute and chronic nephritis. He accepts the elevation of the blood pressure as a regulating phenomenon—the work of the glomeruli. Whether this occurs by chemical or reflex means is still a question. The arterial pressure in his experience always rose when uremia was impending or established. Patients leading tranquil lives, on a light diet, kept the blood pressure at a moderate height. Change to a mixed diet, especially when meat and salt were taken, always increased the pressure.

58. **Experimental Study of Gout.**—Van Loghem summarizes the results of his research in the statements that uric acid and sodium urate are soluble in the body fluids of the rabbit and dog, the former much more than the latter. Alkalies taken internally favor experimental deposition of the urates, while acids prevent it. This suggests, he adds, the possibility that hydrochloric acid might be used for a rational prophylaxis of the formation of urates in man.

59. **Atrophy of Muscles in Cerebral Paralysis.**—Steinert has been studying the muscular atrophy in 68 cases of paralysis. His results harmonize with the conclusions of previous similar research, and throw light on several new points. It seems to be an established fact that cerebral paralysis of the extremities is followed by atrophy of the muscles in the limbs as regularly as is the case in every peripheral paralysis. He found the atrophy more pronounced in the cases of flaccid than of spastic paralysis.

60. **Pathogenesis of Tetany.**—Pineles presents an array of arguments to prove that all forms of tetany in man and animals have a common origin in an insufficiency of the "epithelium bodies," the parathyroids. The thyroid gland may be entirely removed, without subsequent tetany, if they are left intact. These bodies perform the task of rendering innocuous certain toxic substances generated in the body. These toxins are the tetany toxins, and when the organism is not protected tetany is liable to develop. He is at work now on an extract of the parathyroids which he hopes will prove an effectual remedy for the prevention and cure of tetany.

61. **Latest Views of Typhoid and Paratyphoid.**—During the last two years Brion and Kayser have made extensive clinical and bacteriologic studies in over 200 cases of typhoid fever. The definition of infection with the Eberth-Gaffky bacillus, based on their findings, is merely the vague description: "a febrile condition not to be explained by any evident findings in any organ, and in which there is no exanthem nor special course characteristic of any other disease." This definition is important theoretically, as it shows that it is impossible to determine any clinical symptomatic entity from the identity of the causal agent of the infection. They ascribe infection to the tonsils: "The portal of entry lies either in the gastro-intestinal tract or above the stomach, perhaps in the region of the tonsils. The frequent positive bacteriologic findings in the tonsils suggest the plausibility of the latter assumption, and explain the first symptoms of typhoid—which are always of a general nature—as due to the entrance of the bacilli from the tonsils into the lymphatic system and thence into the blood. The bacilli were found in the blood at the very beginning of the disease in 94 per cent. of the cases, and they gradually disappeared from the blood as the disease progressed. The bacilli circulating in the blood and lymph induce the characteristic foci in spleen and liver, in the mammary and other glands, and in the intestine, in the brain, lungs and serous membranes, and in the skin (roseolæ). Any organ may be affected, the lymphatic apparatus with especial frequency. The lesion in Peyer's patches is a phenomenon co-ordinated to the entire process, only it occurs with exceptional frequency. It is entirely absent in some cases, and this seems to be the rule in children. After the bacilli have disappeared from the blood and other organs they may lurk for months and years in the gall bladder, particularly when there is residual bile from the presence of gallstones. The typhoid affection may persist in the gall bladder as a purely local process for a long time. The irritation of the body cells from the presence of the bacteria results in the production of substances which pass into the body juices and are the cause of agglutination and of the specific bactericidal action." Their experiments with animals and with human subjects effectually demonstrated that the intestinal tract is not a favorable soil for the settling of the typhoid bacillus. Its growth is checked or it is entirely destroyed in the intestines. They regard it as difficult to imag-

ine any circumstances which would render it possible for the bacilli to make their way primarily into the blood through the intestinal walls. One of their findings to which they call attention is the spasmodic way in which the bacilli were found in the dejecta; at intervals none was to be found in the diarrheic stools, even at the height of the disease. In a number of dubious cases—which later proved to be typhoid—no typhoid bacilli could be discovered in the stools at first. This is another argument in favor of the assumption that typhoid does not always commence in the intestines, but may start as a lymph and blood affection (possibly entering by way of the tonsils). The positive findings in the stools always increased from about 32 per cent. in the first week to about 45 per cent. in the third week. As the final conclusion from this extensive research, Brion and Kayser assert that the assumption of the symptom-complex of typhoid fever as an etiologic entity must be abandoned. It must be regarded as a group of affections not to be differentiated clinically, whose causal agents form a special group apart.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

68 (XXXII, No. 3.) *Versuche zur Uebertragung der Syphilis auf Affen (transmission to monkeys). Neisser.
69 What Has the General Practitioner Gained from the Progress in Surgery of the Kidneys?—Was ergibt sich für den praktischen Arzt aus den Fortschritten der Nierenchirurgie? H. Küttner.
70 Ueber Exsudat-Cellen im allgemeinen und die Exsudat-Cellen bei verschiedenen Formen von Meningitis im besonderen. J. Orth.
71 Ueber die dietetische Behandlung des Magengeschwürs (of gastric ulcer). H. Senator.
72 Ueber den derzeitigen Stand der Tuberkulose-Bekämpfung (present status of war against tuberculosis). R. Koch.
73 Exstirpation einer malignen Nierengeschwulst (kidney adenosarcoma in boy of 3. Recovery). F. Cuno and Trapp.
74 Ueber Tonsillar-Tuberkulose. O. Reunert.
75 *Eine Methode zur schnellen und billigen Herstellung von Projektionsbildern (rapid and cheap lantern slides). Schumburg (Hanover).
76 (No. 4.) *Ueber Operationen am Pancreas und am Magen (stomach). W. Körte.
77 *Ueber Framboesia tropica (Yaws). A. Castellani (Colombo, Ceylon).
78 *Pyrodin Anemia in Dogs.—Pyrodinvergiftung bei Hunden. M. Rothmann.
79 *Zur Differential-Diagnose des Heu-Asthmas gegen die anderen Asthma-Formen. A. Wolff-Eisner.
80 Die Agglutination in den Händen des praktischen Arztes (in hands of general practitioner). W. Loele.
81 *Eine neue Methode der quantitativen Aceton-Bestimmung. F. Bluth (Neuenahr).

68. **Transmission of Syphilis to Monkeys.**—The results of Neisser's extensive researches were mentioned in the news columns on page 287. He had nearly 900 monkeys at his disposal, and found that the lower types, as well as the higher, were susceptible to syphilitic infection, although in a lesser degree. The general symptoms observed in the higher animals seldom appeared in the lower types. The animals were inoculated by rubbing the material into deep scarifications. Subcutaneous injection of material or vaccine always gave a negative result. The sound organism seems to be able to destroy the virus inoculated into the subcutaneous tissue, although it may prove to be possible to produce an antitoxin in this way. Passage of the virus through several animals seemed rather to enhance than to attenuate its virulence. The *Spirochæta pallida* was found in a number of cases, confirming Schaudinn's statements. Neisser's assistants, Baermann and Halberstädter, have been left behind in Batavia and are continuing the research. To date it has not resulted in any definite general conclusions.

75. **Inexpensive Lantern Slides.**—Schumberg outlines the drawings on a sheet of glass, fixed with shellac and coated with soot.

76. **Operations on Pancreas and Stomach.**—Körte has operated on 6 patients on account of acute pancreat tis and fatty necrosis, with a favorable outcome in every instance. Early intervention and drainage are able, he thinks, to prevent the spread of the pancreatitis and suppuration. He describes the details of his 2 last operations of this kind, and also of 7 operations on the stomach. He operates without delay even in the acute stage of pancreatitis, hoping thus to avert suppuration and necrosis. The attack resembles gallstone colic except that there is more collapse, and symptoms of peritonitis develop in the upper abdomen. In one of his stomach cases there was great dilatation of the stomach without stenosis of the pylorus. The extreme gastropsis kinked the pylorus, and also entailed complete motor insufficiency. All his patients recovered except one who had cancer of the stomach on a basis of gastric ulcer. The patient, a woman, deferred the operation until she became too weak to rally.

77. **Spirochetes in Yaws.**—Castellani states that he found spirochetes of the pallida type in 11 out of 14 cases of typical yaws on the island of Ceylon.

78. **Experimental Anemia.**—Rothmann has been studying the spinal cord of dogs after severe anemia had been induced by means of pyrodin. A systematic degeneration was evident, even when no functional demands were made on the cord.

79. **Differentiation of Asthma.**—Eisner has encountered a number of cases in which the symptoms indicated hay fever or asthma, but the absence of reaction to pollen disclosed that the asthma was a purely nervous affection. He makes the pollen test with pollen of grains, grasses and corn; he grinds it in salt solution and centrifugates it. If the albuminous solution thus obtained is introduced into the eye of a susceptible individual, the eye itches, becomes bloodshot, and in the severer cases the usual train of hay fever symptoms follows unless aborted by appropriate measures. Among 100 asthmatic persons thus tested in Berlin, only 4 were found who failed to show the specific reaction to the pollen. This shows that the tendency to hay fever is more prevalent in Germany than hitherto supposed, as the pollen test causes no disturbance whatever in normal persons. In conclusion, Eisner discusses the reasons for absence of antitoxin formation after injection of albumin.

81. **Quantitative Test for Acetone.**—Bluth's test is based on the delay in the change of tint when the urine is treated with sodium nitroprussid, sodium hydrate and acetic acid. The more acetone present, the longer the interval before the change of tint. His test, he says, dispenses with repeated distillation and subsequent titration; it requires only from fifteen to thirty minutes, and in regard to accuracy leaves nothing to be desired.

Deutsche Zeitschrift f. Chirurgie, Leipsic.

Last indexed, page 237.

82 (LXXIX, Nos. 4-6.) *Die Reposition der Luxatio obturatoria durch Ruck nach aussen. Riedel.
83 *Ueber den Wert der Mobilisierung des Duodenum bei Operationen wegen Steinen in den tiefen Gallenwegen (in gallstone operations). H. Lorenz.
84 Zur Wirkungsweise der Roentgen-Strahlen (mode of action of rays). O. F. Schulz and R. S. Hoffmann.
85 Zur Pathologie, Diagnostik und Therapie des schnellenden Fingers (trigger finger). Marchesi.
86 *Ueber Cysten-Nieren bei Erwachsenen (cystic kidney in adults). F. Sieber.
87 *Zur Pathologie und Chirurgie der Osteomyelitis gummosa der langen Röhrenknochen (of long bones). M. Landow.
88 Application of Mobilizing Action of Hyperemia to Scoliotic Stiffness.—Anwendung der mobilisierenden Wirkung der Hyperämie auf skoliotische Versteifungen. R. Klapp (Bier's clinic, Bonn). See abstract on page 625.
89 Neues operativ-autoplastisches Verfahren bei narbiger Kieferklemme (cicatricial lockjaw). R. Alessandri (Rome).
90 *Nachbehandlung der chirurgischen Tuberkulose (after-treatment). C. Kraemer.
91 Changes in Testicle of Rat After Application of Radium Rays.—Ueber die feineren Veränderungen im Hodengewebe der Ratte nach Einwirkung der Radiumstrahlen. H. A. Thaler.
92 Subluxation des zweiten Keilbeins (of secoad cuneiform bone). Bergmann.

82. **Dislocation of Head of Femur Through Obturator Foramen.**—Riedel observes that many experienced surgeons have never encountered this condition, but he has had 3 such cases. He was able to reduce the dislocation by a simple maneuver which he describes.

83. **Mobilization of Duodenum as Aid in Deep Gallstone Operations.**—Lorenz describes the particulars of 5 cases of gallstones, requiring intervention in the deep biliary passages, in which he mobilized the duodenum as a preliminary measure. The advantages of this procedure were very great, and it was easily accomplished, although the conditions were exceptionally grave.

86. **Polycystic Degeneration of the Kidney.**—Sieber's long article discusses the origin of the condition and describes a case personally observed in a woman of 46. He then summarizes 211 cases he has found in the literature, all in persons

over 20 years of age. He further refers to 32 published reports of cases in children from 8 weeks to 19 years old. In 9 cases the affection was found to be unilateral and in 150 bilateral. In the others the condition of the second kidney was not mentioned. In about one out of every 8 cases the affection caused no symptoms during life and was an autopsy surprise. In 62 cases nephrectomy was undertaken, generally on a mistaken diagnosis, and death followed in 20 out of the 61 cases in which the result is known. In 9 of the remaining 41 cases symptoms developed later indicating disease in the other kidney. Sieber concludes from his summary that operative intervention in case of polycystic degeneration of the kidney should not be advised unless under compelling circumstances, such as suppuration and anuria. Under other conditions, expectant, palliative treatment should be the rule. All injurious influences that might increase the demands on the kidneys should be warded off, and the heart action should be carefully supervised. The treatment, on the whole, should be similar to that for contracted kidney. On account of the frequent hereditary character of the affection the patient's near relatives should also be examined and warned to avoid all injurious influences liable to favor the development of a kidney affection. The symptoms of polycystic degeneration are uncertain and the course of the affection is irregular, so that the diagnosis is difficult. Only 21 of the cases on record were correctly diagnosed during life. The first and most important symptom is generally the increase in size of the kidneys. These organs may become so much enlarged that they nearly touch on the median line, although one is usually much larger than the other. In only 26 cases was it possible to palpate a tumor on both sides. Pain may or may not be present, and the urine is not characteristic. It is generally acid, limp and bright yellow, with little sediment. Hematuria was noticed in about a fifth of the cases. The general symptoms are all more or less the consequences of a chronic or acute uremia. The digestive apparatus is especially affected, and its disturbances may overshadow all the other symptoms, sometimes for years.

87. **Gummatous Osteomyelitis of Long Bones.**—Landow found it difficult to differentiate a case of osteomyelitis in the long bones of a girl of 16. The symptoms and location of the lesions suggested a tuberculous process. Hyperostosis of the tibia and the fact that none of the bone foci had ever displayed a tendency to suppurate, cast some doubt on this diagnosis. The idea of syphilis was discarded, as no trace of it could be found in the history and there were no other signs of syphilis, while Landow was assured that prolonged treatment on the assumption of inherited syphilis had been applied previously without any result. Operations disclosed extensive osteomyelitis and necrosis of the bones, but no tubercles nor staphylococci. Proper antisyphilitic treatment cured the recent foci, but operative intervention was required for the old lesions. The patient was restored to comparative health.

90. **Necessity for After-Treatment of Surgical Tuberculosis.**—Kraemer cites a number of instances from his own experience in which patients apparently healthy for a few years after operative treatment of some local tuberculous lesion, later developed pulmonary phthisis. The persistence of a latent focus after what was supposed to be radical extermination of the tuberculous process would have been revealed in these cases if tuberculin had been injected after the operative wound had healed. He consequently advocates testing with tuberculin as a routine measure after the healing of any surgical or gynecologic tuberculous process treated by conservative or operative measures. The tuberculin test will show either that the patient is free from tuberculosis, in which case he can be dismissed from further treatment, or that some latent focus still persists, in which case the local reaction will frequently point to the site of the lesion. Persons in this latter category should be given appropriate treatment until their entire freedom from tuberculosis can be definitely established. By these means it will be possible to save these individuals from a revival of their tuberculous affection by propagation of metastasis, and also to protect other persons from contamination by their infectious secretions, and unborn children from inherited infection. It should be accepted as a principle that every individual with a latent tuberculous focus is to be regarded as already a candidate for consumption, and treated accordingly.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed, page 79.

93 (LVIII, Nos. 1-2.) Studien über die Beziehungen-zwischen optischer Aktivität und Reduktion bei diabetischer und nicht diabetischer Glykosurie. H. C. Geelmuyden.
94 Infektion mit Ankylostomum duodenale von der Haut aus (through the skin). A. Looss.
95 Chemical Composition of Blood and Organs.—Weitere Untersuchungen über die chemische Zusammensetzung des Blutes und verschiedener menschlicher Organe. M. Dennstedt.
96 Beitrag zu den Purpura-Erkrankungen. H. Risel.
97 Ueber paroxysmale Hämoglobinurie. J. Donath and K. Landsteiner.
98 Stoffwechseluntersuchungen bei einem Fall von Pentosurie (metabolism). Tintemann.
99 Zur Mechanik der Expektoration. E. Aron.
100 (Nos. 3-4.) *Klinische Untersuchungen über die Viskosität des Blutes. J. Bence.
101 *Experimentelle Untersuchungen über die physiologische Bedeutung der Radioaktivität der Mineral-Wässer. P. Bergell and A. Bickel.
102 Zur Kenntnis der Rückenmarksveränderungen nach Verschluss der Aorta abdominalis (changes in spinal cord after obstruction of aorta). A. Alexander.
103 *Cytologie der Cerebrospinal-Flüssigkeit bei Nervenkranken (in nervous affections). E. Samele.
104 *Fall von geheiltem Aneurysma dissecans der Aorta (healed). H. Börger.
105 Experimentelle Untersuchungen über die Entstehung der Harncylinder (tube-casts). P. S. Wallerstein (Moscow).
106 *Einfluss des Wassergehaltes des Blutes auf die Dimensionen der roten Blutkörperchen (influence of proportion of water in blood on size of reds). M. Georgopulos.
107 *Blood Findings in Children with Adenoid Vegetations.—Blutbefund bei Kindern mit Wucherungen des Nasenrachenraums. M. Scheier.
108 Origin of Renal Dropsy.—"Folgen subkutaner Kochsalzzufuhr nach Nephrektomie." A. Albu.

100. **Viscosity of the Blood.**—The research reported by Bence was conducted at von Koranyi's clinic at Budapest. It shows that the viscosity of the blood increases and subsides with the proportion of carbon dioxid in the blood. The latter acts on the red corpuscles, modifying their size and surface, and thus rendering the blood more or less fluid. The relations between the proportion of carbon dioxid and the viscosity can be observed in the circulating blood. The increasing viscosity of the blood from excess of carbon dioxid overburdens the heart. If the overcharge of carbon dioxid is the consequence of cardiac insufficiency, it tends in turn to increase the latter. Inhalation oxygen in appropriate cases reduces the viscosity of the blood unduly laden with carbon dioxid, as it promotes the elimination of the latter. By this means it is possible to relieve to a certain extent the overburdened heart. The blood in nephritis is less viscous than normal blood, probably from the excess of water. Attempts to influence the viscosity of the blood by varying the food gave negative results in his experiments on animals.

101. **Physiologic Significance of Radioactivity of Mineral Waters.**—Bergell and Bickel have been continuing their research on this subject, their findings corroborating their previous assertions in regard to the powerful physiologic and biologic influence of the natural radioactive emanations of the mineral waters. All observations to date have shown that waters rising from the depths of the earth are endowed with marked radioactive powers while surface spring waters are comparatively free from it. The waters lose their radioactivity rapidly after they are taken from the earth. Tests with Wiesbaden thermal waters showed that the digesting power of gastric juice in a test-tube was increased by the radioactivity. If thermal water was added to pure gastric juice, the digesting power of the juice was reduced by the dilution, but the reduction was less marked when the waters were still radioactive than when they had lost their radioactivity. Kalmann has recently announced that Gastein waters arrest the development of the *Bacillus prodigiosus* as long as they still possess their radioactivity, but not after they have lost it. The conclusions of the research all point to the assumption that it is possible for physiologic and biologic processes to be influenced by the radium emanations in mineral waters.

103. **Cytology of Cerebrospinal Fluid in Nervous Affections.**—Samele tabulates his findings in a dozen cases of tabes, meningitis, paralysis or other nervous affections. They differ from those of other investigators in certain respects, as he re-

lates in detail, comparing them with the data in previous articles on the subject.

104. **Healed Dissecting Aneurism of the Aorta.**—Börger has found 18 cases of dissecting aneurism of the aorta terminating in recovery on record in the literature, and describes a case personally observed at Erlangen. The aneurism in this case was evidently the result of a so-called internal trauma. It healed as the dividing wall became perforated, allowing the layers of the wall to grow together once more. The conditions in the circulation, however, had been rendered so unfavorable that the already hypertrophied heart gave out in the course of a year.

106. **Influence of Water Content of Blood on Size of the Red Corpuscles.**—The research described was made on 200 patients with dropsy, severe diarrhea or other conditions causing great difference in the proportion of water in the blood. It demonstrates that hydremia has nothing to do with the production of megalocytes. Also that the biconcave microcytes are intact red corpuscles.

107. **The Blood in Children with Adenoid Vegetations.**—Scheier found the proportion of hemoglobin about 13.8 per cent. below normal in the children with adenoid vegetations whom he examined. The red corpuscles were about the usual number, but there were always from 14,000 to 17,000 white corpuscles, and sometimes 21,000 and 24,000. The small and large lymphocytes were unusually numerous, and the multinuclears somewhat diminished. A slight degree of chlorosis with leucocytosis, specially lymphatic, was the rule. Removal of the growths caused improvement; the hemoglobin rose to 74, 80 or 92 per cent. in the course of from one to several months afterward, while the leucocytosis declined. In conclusion he remarks that the adenoid vegetations in the nasopharynx are not the only manifestations of hyperplasia in the lymphatic system. The lymph glands in the neck and under the jaw are always more or less swollen in these cases. The swelling almost invariably subsides after removal of the adenoid vegetations, and the somewhat low blood pressure rises to approximate normal.

Nordiskt Medicinskt Arkiv, Stockholm.

Last indexed, page 842.

109 (XXXVIII. Internal Medicine, No. 3.) *Beitrage zur Methodik der klinischen Stuhluntersuchungen (examination of stools). H. P. T. Oerum (Copenhagen).

110 *Zur Frage von der Aetiologie und Pathogenese der angeborenen Herzkrankheiten (congenital heart affections). C. Sundberg.

111 Cytologie der Pleura- und Peritoneal-Ergüsse. H. Köster.

109. **Clinical Examinations of Feces.**—Oerum has been studying the intestinal functions in the clinic for more than a year, following the directions of Schmidt and Strassburger. The test diet consists of 0.5 liters of milk and 50 gm. zweiback early in the morning; for breakfast, 40 gm. oatmeal or 0.5 liters of oatmeal gruel, 10 gm. butter, 200 gm. milk, 300 gm. water and one egg (strained); for dinner, 125 gm. chopped beef (weighed raw), browned over but still raw inside, and 250 gm. mashed potatoes (made with 190 gm. potatoes, 100 gm. milk and 10 gm. butter). The afternoon meal is like the earliest meal, and the supper like the breakfast. A tablet of 0.3 gm. of pulverized carmin is given usually at the commencement and conclusion of the test diet, which is kept up for three days or longer. For the macroscopic examination he takes a lump of feces the size of a walnut and rubs it in a mortar with water and then spreads the soft mass in a thin layer on a wide glass saucer standing on a black background. He then examines it for mucus, evidences of parasites, pus, foreign bodies, etc., relics of connective tissue from the raw meat, muscle fiber and potato, and for crystals of ammonia or magnesia phosphate. Microscopic and chemical tests are then applied. His experience with the aloin test for invisible blood has been extremely favorable in 100 cases. He regards it as a great advance in our means of detecting carcinoma of the intestinal tract and latent ulcer in stomach or intestine. He describes the technic for this and for various other tests, and the importance of the findings is emphasized. He determines the proportion of water by weighing a jar containing some dry sand and then pouring 10 c.c. of the diluted feces on the sand, with a little diluted sulphuric acid. The jar is then dried out to a constant weight, the difference between the two weights being the weight of the dry substances in 10 c.c. of feces. When an abnormal proportion of fat is discovered in the diet, he limits the intake of fat, which sometimes materially benefits chronic intestinal affections. His experience has confirmed the assumption that chronic constipation in the majority of cases is due to exceptionally perfect utilization of the food ingested with the consequent lesser secretion in the intestines from lack of stimulation from fecal masses.

110. **Pathogenesis of Congenital Heart Affections.**—Sundberg describes the autopsy findings in a case of congenital deformity of the heart. The patient, a man, lived to the age of 22 although with various malformations of the heart. They all bore the appearance of having been the result of excessive bending over of the head during uterine existence.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

CLINICAL APPLIED ANATOMY, or the Anatomy of Medicine and Surgery. By Charles R. Box, M.D., B.S., B.Sc., M.R.C.P., F.R.C.S., physician to out-patients of St. Thomas's Hospital, and W. McAdam Eccles, M.S., F.R.C.S., Assistant Surgeon, Joint Lecturer on Anatomy and Demonstrator of Operative Surgery at St. Bartholomew's Hospital. Illustrated by 45 plates, of which 12 are colored, and 6 figures in the text. Cloth. Pp. 471. Price, $4.00. Philadelphia: P. Blakiston's Son & Co., 1906.

THE WORLD'S ANATOMISTS. Concise Biographies of Anatomic Masters, from 300 B. C. to the Present Time, whose Names Have Adorned the Literature of the Medical Profession. By G. W. H. Kemper, M.D., Professor of the History of Medicine in the Medical College of Indiana, Indianapolis. Revised and enlarged from the original serial publication in the *Medical Book News*. 11 illustrations, 9 of which are portraits. Paper. Pp. 79. Price, 50c. Philadelphia: P. Blakiston's Son & Co., 1906.

SCIENTIFIC MEMOIRS BY OFFICERS OF THE MEDICAL AND SANITARY DEPARTMENTS OF THE GOVERNMENT OF INDIA. Issued under the Authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Calcutta: Office of the Superintendent of Government Printing, India, 1906. No. 21. Standardization of Anti-Typhoid Vaccine, by Captain George Lamb, M.D., I.M.S., and Captain W. B. C. Forster, M.B., D.P.H., I.M.S. Price, annas, 6, or 7d.

THIRD TREATISE ON THE EFFECTS OF BORAX AND BORIC ACID ON THE HUMAN SYSTEM, with Diagrams, being a Critical Review of the Report of Dr. H. W. Wiley, Chief of the Bureau of Chemistry of the U. S. Department of Agriculture, to the Secretary of Agriculture. By Dr. Oscar Liebreich (Translated from the German). Paper. Pp. 70. Price, $1.75. Philadelphia: P. Blakiston's Son & Co., 1906.

THE NATURAL LAWS OF SEXUAL LIFE, Medical-Sociological Researches by Dr. Anton Nystrom, Stockholm. Authorized Translation from the Third Swedish Edition by Carl Sandzen, A.M., M.D., Ph.D., Professor of Physical Therapeutics University of Kansas School of Medicine. Cloth. Pp. 260. Price, $2.00. Kansas City, Mo.: The Burton Company, Medical Publishers, 1906.

STATE CHILDREN RELIEF BOARD. Report of the President, the Hon. C. K. Mackellar, M.B., C.M., M.L.C., for the year ending April 5, 1904, and also for the year ending April 5, 1905. Legislative Assembly, New South Wales. Paper. Pp. 37 and 40. Price, 1s. 6d. and 1s. 9d. Sydney: William Applegate Gullick, Government Printer, 1904 and 1905.

CHEMISTRY OF THE ALBUMENS. Ten Lectures Delivered in the Michaelmas Term, 1904, in the Physiological Department of University College, London. By S. B. Schryver, D.Sc., Ph.D., Lecturer in Physiological Chemistry to University College, London. Cloth. Pp. 191. Price, $2.00. Philadelphia: P. Blakiston's Son & Co., 1906.

NATURE AND HEALTH. A Popular Treatise on the Hygiene of the Person and the Home. By E. Curtis, A.M., M.D., Emeritus Professor of Materia Medica and Therapeutics, Columbia University, New York. Cloth. Pp. 313. New York: Henry Holt & Co., 1906.

THE TRI-UNIT PHILOSOPHY. A Treatise Based on the Discovery of Unit Matter, and How It Develops Into Elements by Virtue of the Combined Action of Energy and Force. By Porter Mellen Jones, M.D., Chicago. Paper. Pp. 171.

PUBLICATIONS OF THE MASSACHUSETTS GENERAL HOSPITAL, Boston. Clinical Contributions. Vol. I. No. 2. February, 1906. Paper. Pp. 125. Boston, Mass.: Journal of Medical Research Publishing Office.

BLACK'S MEDICAL DICTIONARY. Edited by John D. Comrie, M.A., B.Sc., M.B., M.R.C.P. With over 350 illustrations in the Text. Cloth. Pp. 854. Price, $2.50. New York: The MacMillan Company, 1906.

SIXTEENTH ANNUAL REPORT of St. Mary's Hospital, Rochester, Minn. Conducted by Sisters of St. Francis. Paper. Pp. 29. Rochester, Minn.: C. Elliott & Son, 1906.

STUDIES FROM THE BENDER HYGIENIC LABORATORY, Albany, N. Y. Reprints. Vol. II, 1905. Paper. Pp. 111. Albany, N. Y.: Brandow Printing Company.